IVY BIOMEDICAL SYSTEMS, INC.

Your path to success

Model *3000 series*

Cardiac Trigger Monitors
3000, 3050, 3100, 3150, and 3200

P/N 2811-00-20

Service Manual

User Responsibility

This product will perform in conformity with the description thereof contained in this Operation Manual and accompanying labels and/or inserts, when assembled, operated, maintained and repaired in accordance with the instructions provided. This product must be checked periodically. A defective Product should not be used. Parts that are broken, missing, plainly worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, IVY Biomedical Systems, Inc. recommends that a telephone call or written request for service advice be made to IVY Biomedical Systems, Inc. Service Department. This product or any of its parts should not be repaired other than in accordance with instructions provided by IVY Biomedical Systems, Inc. trained personnel. The product must not be altered without the prior written approval of IVY Biomedical Systems, Inc. Quality Assurance Department. The user of this Product shall have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, improper repair, damage or alteration by anyone other than IVY Biomedical Systems, Inc.

CAUTION: US Federal law restricts this device to sale by or on the order of a licensed medical practitioner.

Ivy Biomedical Systems, Inc. has declared that this product conforms with the Eurpean Council Directive 93/42/EEC Medical Device Directive when its used in accordance with the instructions provided in the Operation and Maintenace Manual.

CE 0413

Ivy Biomedical Systems, Inc.
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Branford, Connecticut 06405. USA
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SM3000series
22Sep2005
2811-00-20 Rev.00

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Declaration of Conformity

Manufacturer:	Ivy Biomedical Systems, Inc. 11 Business Park Drive Branford, CT 06405
Authorized Representative:	Cavendish Scott Ltd. SG5 1FW, England
Type of Equipment:	Physiological Monitors
Models:	3000 (Series)

We, Ivy Biomedical Systems, Inc., hereby declare that the devices mentioned above comply with the Swedish National Board of Health and Welfare Regulation and guidelines on medical devices SOSFS 1994:20 (M) 28 October 1994 – transposing European Medical Devices Directive 93/42/EEC.

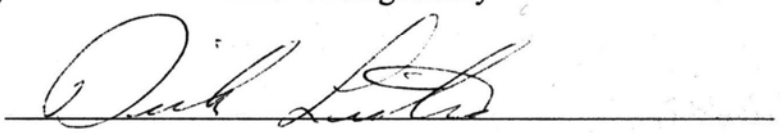
Date of Validity: March 21, 2003

Classification: IIb According to rule No. 10

Conformity Assessment Procedure: Annex II

Notified Body: SEMKO AB Notified Body No. 0413

Name of Authorized Signatory: Dick Listro
Position held in Company: Director of Regulatory

Signature 

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WARRANTY

All products manufactured by Ivy Biomedical Systems, Inc. under normal use, are warranted to be free from defects in material and workmanship and to operate within published specifications, for a period of one year from date of original shipment.

All accessories such as patient cables and lead wires, supplied by Ivy Biomedical Systems, Inc. under normal use, are warranted to be free from defects in material and workmanship and to operate within published specifications, for a period of 90 days from date of original shipment.

If an examination by Ivy Biomedical Systems, Inc. discloses such product(s) or component part(s) to have been defective, then Ivy's obligation is limited at Ivy's option, to repair or replacement.

When a product or products need to be returned to the manufacturer for repair or examination, contact customer service personnel at Ivy Biomedical Systems, to obtain a Return Material Authorization number (RMA #) and the correct packing instructions:

Customer Service
Telephone: (203) 481-4183 or (800) 247-4614.
Fax: (203) 481-8734.
E-mail: ivybio@ivybiomedical.com

All products being returned for warranty repair shall be shipped prepaid to:

Ivy Biomedical Systems, Inc.
11 Business Park Drive.
Branford, CT. 06405. USA.

Ivy will prepay the shipment of the repaired or replacement product to customer at Ivy's expense.

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INTRODUCTION

This manual is to provide information on the correct use of the Model 3000 Series ECG and Heart Rate synchronizer/patient monitor. It is up to the user to ensure that any applicable regulations regarding the installation and operation of the monitor are observed.

The model 3000 Series is Medical Electrical Equipment intended to be used under medical supervision. The model 3000 Series must be operated by trained and qualified medical personnel only.

Using This Manual

We recommend that you read this manual before operating the equipment. This manual is written to include all options. If your monitor does not include all options, menu selections and display data for those options will not appear on your monitor.

Use the Monitor Description section for general descriptions of controls and displays. For details on the use of each option, refer to the section of the manual dealing with the appropriate option.

Boldface type is used in text to refer to the labeling on user controls. Special brackets [ ] surround menu selections used with the programmable keys.

Manufacturer's Responsibility

The manufacturer of this equipment is responsible for the effects on safety, reliability, and performance of the equipment only if:

- Assembly operations, extensions, re-adjustments, or repairs are carried out by persons authorized by the manufacturer
- The electrical installation complies with all applicable regulations
- The equipment is used in accordance with the instructions in this manual

Incorrect operation or failure of the user to maintain the monitor in accordance with proper maintenance procedures relieves the manufacturer or his agent from all responsibility for consequent non-compliance, damage, or injury.

Ivy Biomedical Systems, Inc.
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fax (203) 481-8734
e-mail: techline@ivybiomedical.com

This manual explains how to set up and use the Model 3000 Series. Important safety information is located throughout the manual where appropriate. READ THE ENTIRE SAFETY INFORMATION SECTION BEFORE YOU OPERATE THE MONITOR.

SAFETY

Electrical

This product is intended to be operated from a mains power source of nominally 100 to 230V~, 47 to 63 Hz and Maximum AC Power consumption: 35VA.

WARNING: To prevent electrical hazards to all personnel, this monitor must be properly grounded. Connect the monitor only to a three-wire, grounded, hospital grade receptacle. The three-conductor plug must be inserted into a properly wired three-wire receptacle; if a three-wire receptacle is not available, a qualified electrician must install one in accordance with the governing electric code.

WARNING: Do not under any circumstances remove grounding conductor from the power plug.

WARNING: The power cable supplied with this equipment provides for this protection. Do not attempt to defeat this protection by modifying the cable or by using ungrounded adapters or extension cables. The power cord and plug must be intact and undamaged. To disconnect the equipment from the mains power unplug the power cord.

WARNING: Do not connect to an electrical outlet controlled by a wall switch or dimmer.

WARNING: If there is any doubt about the integrity of the protective ground conductor arrangement, do not operate the monitor until the AC power source protective conductor is fully functional.

WARNING: Do not place the monitor in any position that may cause it to fall on the patient. Do not lift the monitor by the power supply cord or patient cable.

WARNING: Electric shock hazard! Do not remove covers or panels. Refer service to qualified service personnel.

WARNING: To avoid electrical shock, disconnect the monitor from its power source before changing fuses. Replace fuses only with same type and rating T.5A, 250V (Metric 5x20mm).

WARNING: Do not clean monitor while it is on and/or plugged into a power source.

WARNING: If unit is accidentally wet, discontinue use until dry and then test unit for proper operation before reuse on a patient.

WARNING: This unit uses a common isolation path for the ECG leads. Do not connect any non-isolated accessories to the ECG input when connected to a patient, as this may compromise the safety of the unit. When attached to other devices, insure that the total chassis leakage currents of all units do not exceed 300 µA.

Explosion

DANGER: Explosion hazard! Do not use this equipment in the presence of flammable anesthetics or other flammable substance in combination with air, oxygen-enriched environment or nitrous oxide.

Patient Connections

Patient connections are electrically isolated. For all connections use isolated probes. Don't let patient connections contact other conductive parts, including ground. See instructions for patient connections in this manual.

Carefully route patient cables to reduce the possibility of patient entanglement or strangulation.

Leakage current is limited internally by this monitor to less than 10 μA. However, always consider cumulative leakage current that can be caused by other equipment used on the patient at the same time as this monitor.

To ensure that the leakage current protection remains within the specifications, use only the patient cables specified in this manual. This monitor is supplied with protected lead wires. *Do not use* cables and leads with unprotected lead wires having exposed conductors at the cable end. Unprotected lead wires and cables may pose an unreasonable risk of adverse health consequences or death.

Line isolation monitor transients may resemble actual cardiac waveforms and thus inhibit heart rate alarms. To minimize this problem, ensure proper electrode placement and cable arrangement.

If an alarm condition occurs while the alarms are set to off, neither visual or audio alarms will be present.

MRI

The model 3000 Series should not be used within the magnetic field during Magnetic Resonance Imaging.

Pacemakers

Rate meters might continue to count the pacemaker rate during occurrences of cardiac arrest or some arrhythmias. Do not rely on rate meter alarms. *Keep pacemaker patients under close surveillance.*

Electrosurgery Protection

This equipment is protected against electrosurgery potentials. To avoid the potential of electrosurgery burns at monitoring sites, ensure proper connection of the electrosurgery return circuit as described by the manufacturer's instructions. If improperly connected, some electrosurgery units might allow energy to return through the ECG electrodes.

Defibrillation Protection

This equipment is protected against 360 J defibrillator discharge.. The monitor is internally protected to limit current through the electrodes to prevent injury to the patient and damage to the equipment as long as the defibrillator is used in conformance with the manufacturer's instructions.

EMC

This equipment has been certified to be protected to emissions and immunity according to IEC-60601-1-2.

Electromagnetic Compatibility IEC 60601-1-2:2001

CAUTION: Medical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the Operation Manual.

CAUTION: Portable and mobile RF communications equipment can affect medical electrical equipment.

WARNING: The model 3000 should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the Model 3000 should be observed to verify normal operation in the configuration in which it will used.

Accessories

WARNING: The use of accessories other than those specified below may result in increased emissions or decreased immunity of the equipment.

Part Number Description
590161 Three lead patient cable
590162 Set of three lead wires
590317 Low noise three lead patient cable
590318 Set of three radiotranslucent lead wires
590323 Low noise three lead patient cable with 1kohm resistors.

The minimum amplitude or value patient physiological signal is 0.5 mV (AAMI EC-13 3.2.6.1).

WARNING: The use of the Model 3000 below the following amplitude values may cause inaccurate results:

Minimum amplitude of patient physiological signal depending upon the type of patient cable.	
Patient cable part number	**Minimum amplitude**
590161	1.5 mV
590317	0.5 mV
590323	0.5 mV

Guidance and manufacturer's declaration – Electromagnetic emissions		
The Model 3000 is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 3000 should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The Model 3000 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Model 3000 is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – Electromagnetic immunity			
The Model 3000 is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 3000 should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8kV air	±6 kV contact ±8kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast Transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines IEC61000-4-11	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 sec cycle	<5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 sec cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Model 3000 requires continued operation during power mains interruptions, it is recommended that the Model 3000 be powered from an uninterruptible power supply.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	Not applicable	Not applicable

<table>
<tr><th colspan="4">Guidance and manufacturer's declaration – Electromagnetic immunity</th></tr>
<tr><td colspan="4">The Model 3000 is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 3000 should assure that it is used in such an environment.</td></tr>
<tr><th>Immunity test</th><th>IEC 60601 test level</th><th>Compliance level</th><th>Electromagnetic environment – guidance</th></tr>
<tr><td>Conducted RF
IEC 61000-4-6

Radiated RF
IEC 61000-4-3</td><td>3 Vrms
150 kHz to 80 MHz

3 V/m
80 MHz to 2.5 GHz</td><td>3 Vrms

3 V/m</td><td>Portable and mobile RF communications equipment should be used no closer to any part of the Model 3000, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

Recommended separation distance

$d = 1.2\sqrt{p}$

$d = 1.2\sqrt{p}$ 80 MHz to 800 MHz

$d = 2.3\sqrt{p}$ 800 MHz to 2.5 GHz

Where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a], should be less than the compliance level in each frequency range [b]

Interference may occur in the vicinity of the equipment marked with the following symbol:
 </td></tr>
<tr><td colspan="4">NOTE 1 – At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 – These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.</td></tr>
<tr><td colspan="4">[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radios, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, and electromagnetic site survey should be considered. If the measured field strength in the location in which the Model 3000 is used exceeds the applicable RF compliance level above, the Model 3000 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Model 3000.
[b] Over the frequency range 150 KHz to 80 MHz, field strengths should be less than 3 V/m.</td></tr>
</table>

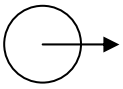
Description of Warning Labels

Attention, consult ACCOMPANYING DOCUMENTS before attempting to change power supply selection or carry out interconnections. Equipment connected should comply with IEC-60601-1 or IEC-950 with configuration to IEC-60601-1-1.

Type CF applied part, Defibrillator proof.

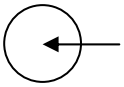
Equipotential ground connector adjacent to this symbol.

Fuse type/rating.



Output signal.

ON

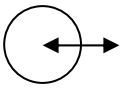


Input signal.

Stand By (STBY)

Alternate Current (AC)

Protective earth (ground)



Input/Output signal

WEEE Compliance

MONITOR DESCRIPTION

The Model 3000 Series series Cardiac Trigger Monitor is an easy to use color monitor that displays a patient's ECG waveform and heart rate. The ECG lead displayed can be selected from Leads I, II or III. In addition high and low heart rate alarm limits can be adjusted to bracket the patient's heart rate so that a violation of these limits produces an audible and visual indication of the violation. The color display has a single trace, large Heart Rate numbers and alphanumeric characters for other data, alarm messages, menus and user information.

The Model 3000 monitor is intended primarily for use on patients in applications requiring precision R-wave synchronization such as timed imaging studies.

The Model 3050 is the same as the Model 3000 except that it has software that detects when the monitor is connected or not connected to another device requiring precision R-wave synchronization.

The Model 3100 is the same as the Model 3050 except that it has an internal Floppy Drive System that allows the operator to store and retrieve ECG events on standard IBM formatted 1.44 MB 3.5" floppy disks. This function will only operate when the model 3100 is electrically connected to a CT-Scanner and only if the DISK STORAGE mode is selected in the data transfer mode switch.

The Model 3150 is the same as the Model 3100 except that it has a RJ54 "Ethernet" connector that allows the monitor to transfer ECG data and trigger controls to the CT console and vice-versa. This function will only operate when the model 3150 is electrically connected to a CT-scanner and CT console and only if the ETHERNET mode is selected in the data transfer mode switch.

The Model 3200 is the same as the Model 3050 except that it has a RJ54 "Ethernet" connector that allows the monitor to transfer ECG data and trigger controls to the CT console and vice-versa. This function will only operate when the model 3200 is electrically connected to a CT-scanner and CT console.

An optional integral recorder is available, set up of recorder functions are made through the monitor menus

The Model 3000 Series is available with different options; not all options are included in all monitors.
The Model 3000 Series is suitable for use in presence of Electro-surgery.
The Model 3000 Series is not intended for use with any other physiological monitoring unit.
The Model 3000 Series is restricted to use on one patient at a time.
The Model 3000 Series is not intended for home-care patient monitoring

Classification (in accordance with IEC-60601-1)

Protection against electric shock:	Class 1.
Degree of protection against electric shock:	Type CF applied part. Defibrillator proof: ECG
Degree of protection against harmful ingress of water:	Ordinary equipment IPX0 per IEC-60529
Methods of Maintenance and Cleaning:	See page 19
Degree of safety of application in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide:	Equipment not suitable for use in the presence of a flammable anesthetic mixture
Mode of operation:	Continuous

Controls and Indicators

Basic Keys

When the monitor is plugged into an AC power source the **ON** switch, when pressed, provides power to the monitor's electronic circuits.

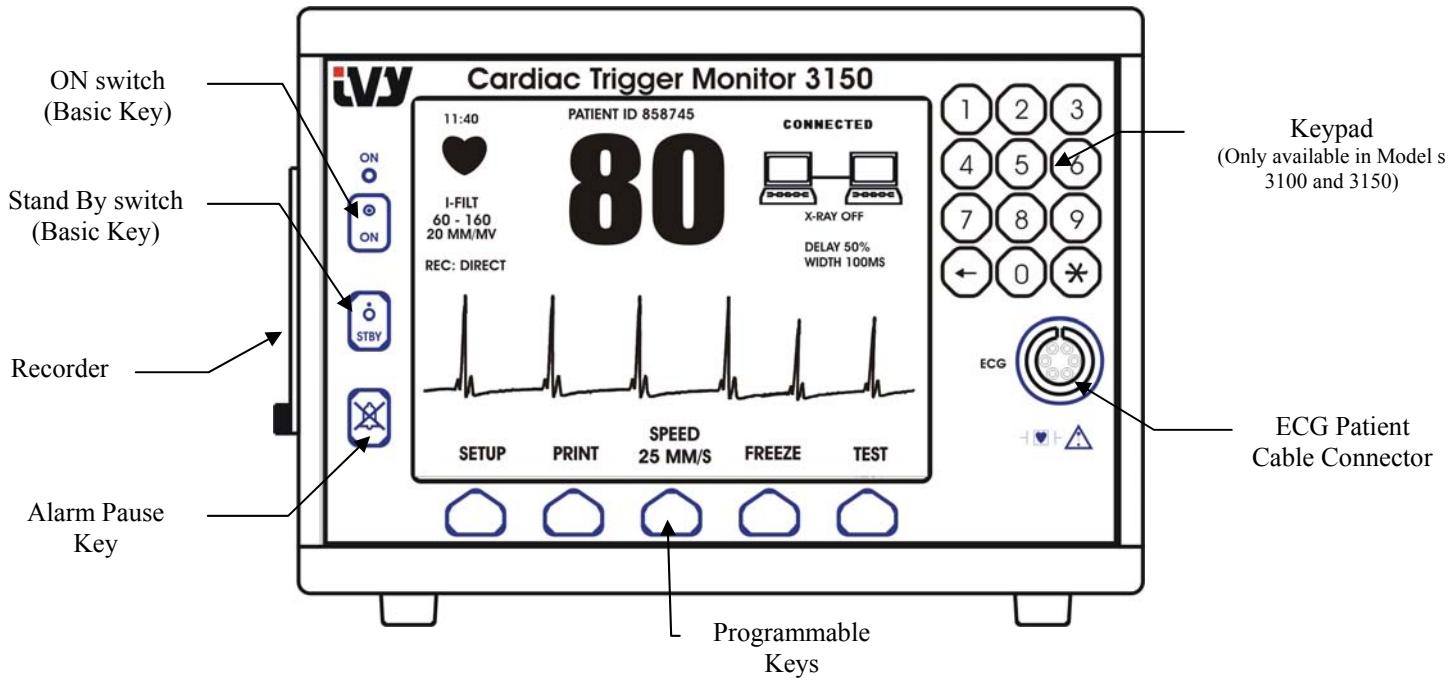
The **STBY** switch, when pressed, disconnects power from the monitor's electronic circuits.

NOTE: To disconnect the monitor from the main power unplug the AC power cord.

Disables the audible and visual alarms for a two-minute period to allow the operator to perform procedures that would otherwise set off the alarms. This avoids the problem of turning off the alarms and forgetting to turn them back on. Press this key again to return the alarms to normal before the two minutes have expired. Pressing **ALARM PAUSE** key for 3 seconds will turn alarms off. Press **ALARMS PAUSE** key again to reactivate the alarms. Pressing **ALARM PAUSE** key will pause the alarms for 120 seconds (2 minutes).

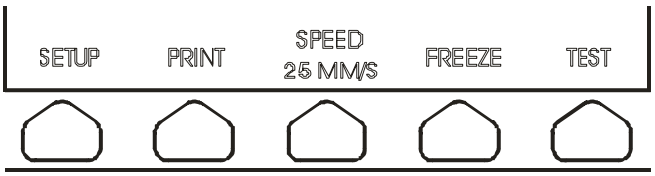
This key enables or disables (arm or disarm) the ECG storage function of the monitor allowing the user to save up to 60 seconds of ECG signal in a 3.5 inches floppy disc.
When the ECG data has been successfully stored this key opens a special menu to re-write data, clear memory or patient ID.

Use as a backspace when entering the patient ID.

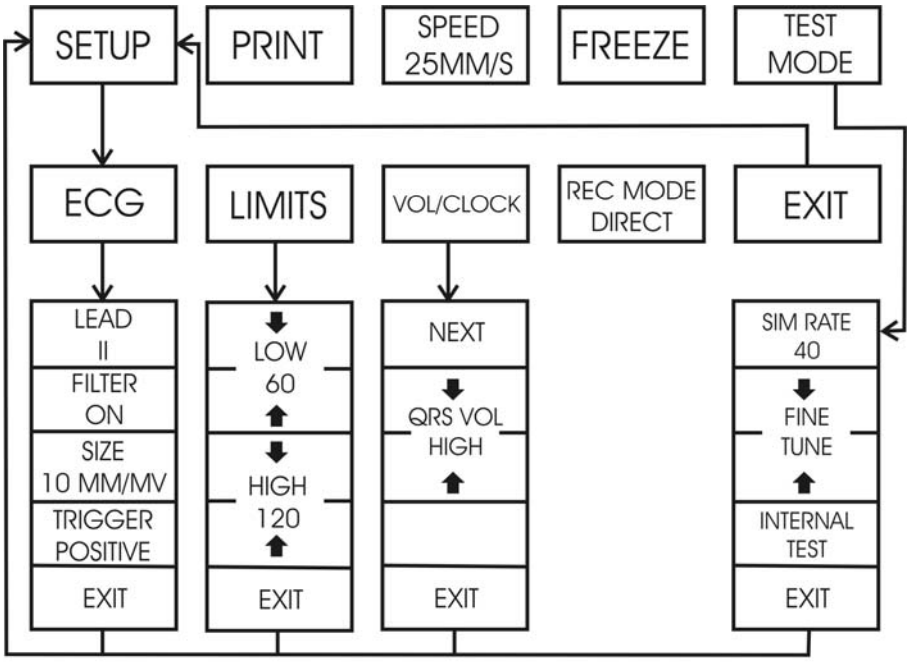


Programmable Keys

Displayed above each programmable key is either a menu item or a function. Pressing a programmable key will display other menu levels or activate an appropriate function. Menu functions are described in the Menu Structure section of this manual.



MENU STRUCTURE (Model 3000 with Polarity Control and Simulator option)



KEY SELECTIONS

ECG Menu
Lead: I - II - III
Filter: ON and OFF
SIZE: 5, 10, 20, and 40mm/mv
TRIGGER: Positive, Negative, and OFF

Limits Menu
Low: 10 to 245 bpm
High: 15 to 250 bpm

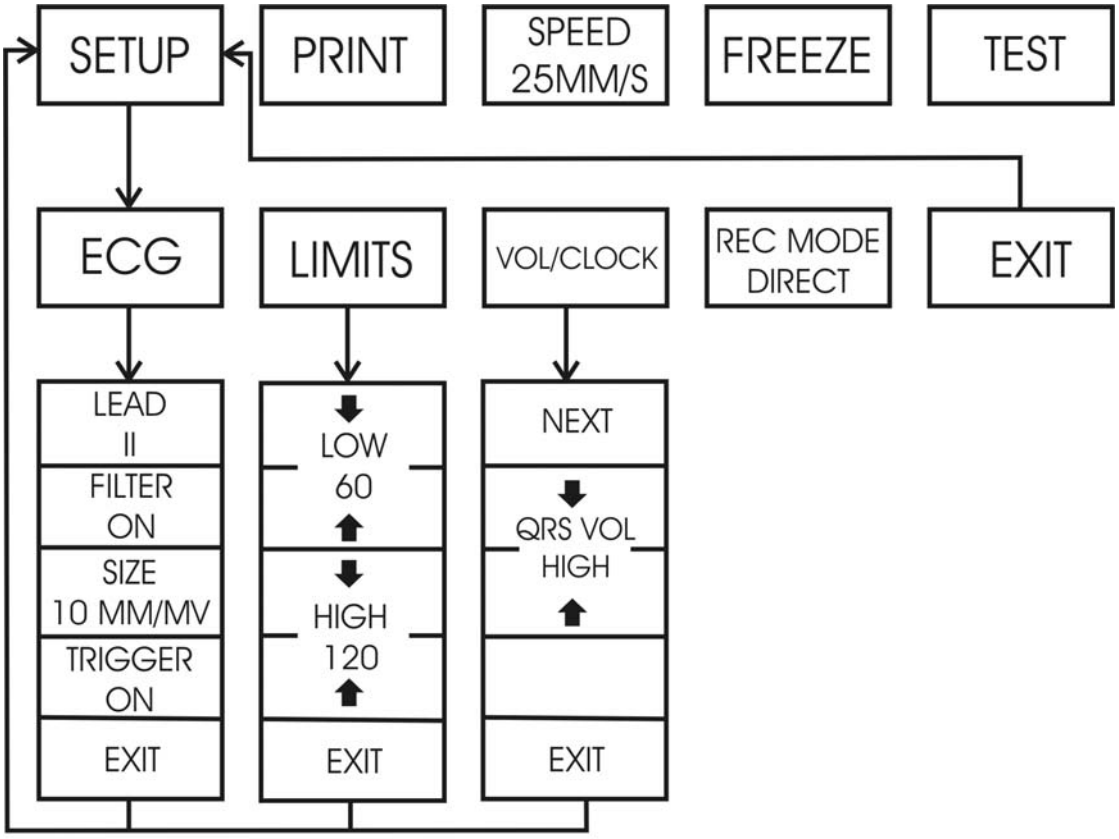
Test Mode Menu
Sim Rate: OFF, 40, 60, 90, 120, and 150
Fine Tune: 40 to 150 bpm

Speed Key:
25 and 50mm/s

Vol/Clock Menu
NEXT KEY
QRS Vol: OFF, High, and Low
Alarm Vol: High and Low
Month
Day
Year
Hour
Minute

Rec Mode Key:
Direct, Delay, and Timed.

MENU STRUCTURE (Model 3000 without Polarity Control and Simulator option)



KEY SELECTIONS

ECG Menu
Lead: I - II - III
Filter: ON and OFF
SIZE: 5, 10, 20, and 40mm/mv
TRIGGER:ON, OFF

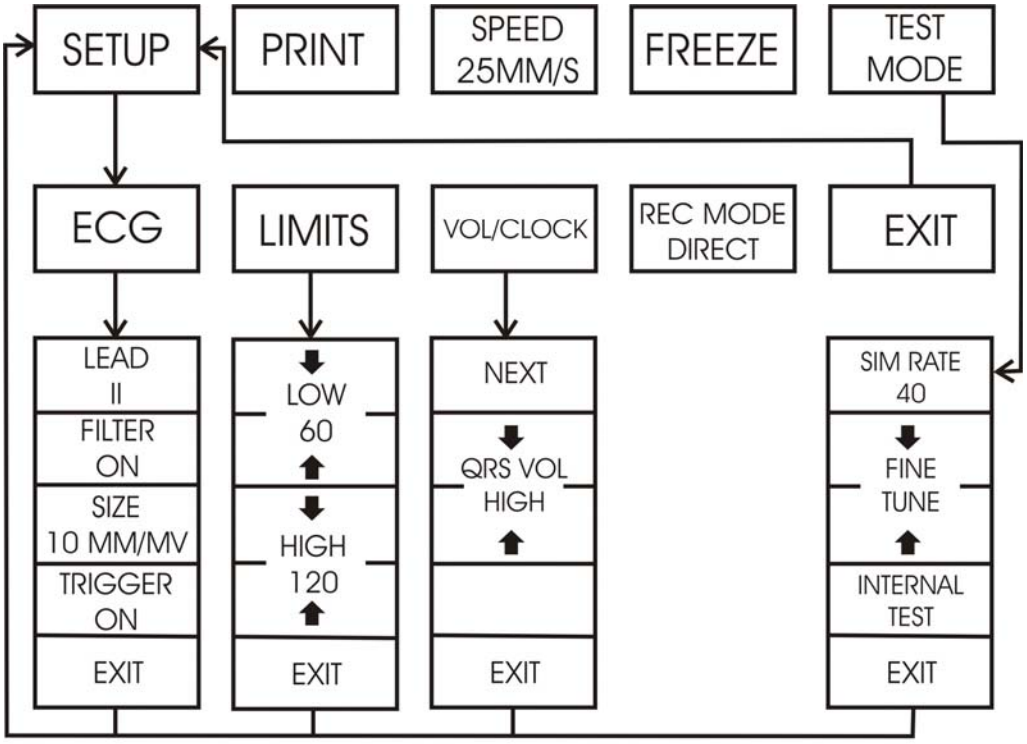
Limits Menu
Low: 10 to 245 bpm
High: 15 to 250 bpm

Speed Key:
25 and 50mm/s

Vol/Clock Menu
NEXT KEY
QRS Vol: OFF, High, and Low
Alarm Vol: High and Low
Month
Day
Year
Hour
Minute

Rec Mode Key:
Direct, Delay, and Timed.

Menu Structure Ethernet Mode (Model 3150)



KEY SELECTIONS

ECG Menu
Lead: I - II - III
Filter: ON and OFF
SIZE: 5, 10, 20, and 40mm/mv
TRIGGER: ON and OFF

Limits Menu
Low: 10 to 245 bpm
High: 15 to 250 bpm

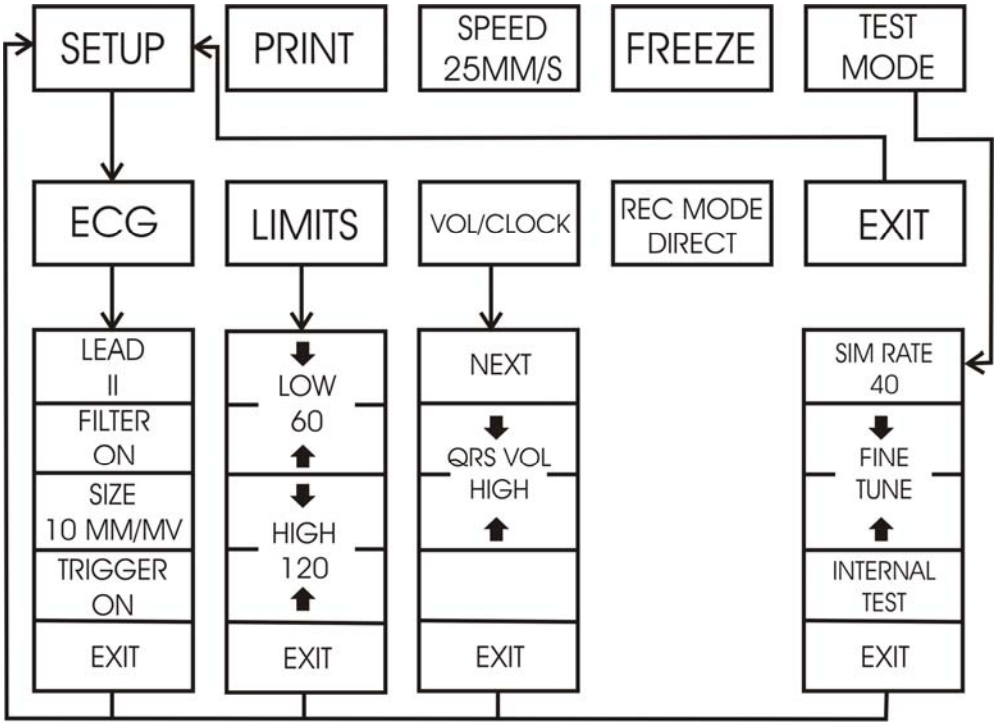
Test Mode Menu
Sim Rate: OFF, 40, 60, 90, 120, and 150
Fine Tune: 40 to 150 bpm

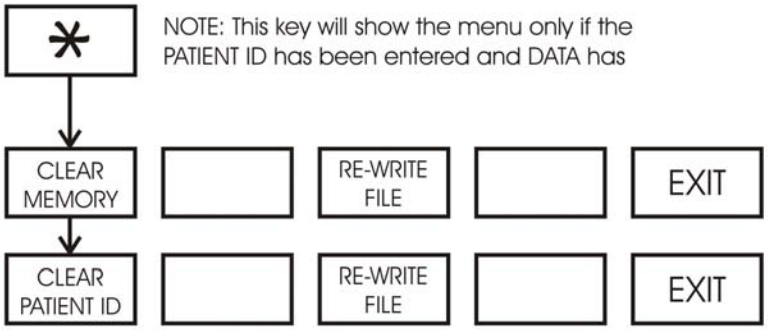
Speed Key:
25 and 50mm/s

Vol/Clock Menu
NEXT KEY
QRS Vol: OFF, High, and Low
Alarm Vol: High and Low
Month
Day
Year
Hour
Minute

Rec Mode Key:
Direct, Delay, and Timed.

Menu Structure Disk Transfer Mode (Model 3150 and 3100)





KEY SELECTIONS

ECG Menu
Lead: I - II - III
Filter: ON and OFF
SIZE: 5, 10, 20, and 40mm/mv
TRIGGER: ON and OFF

Limits Menu
Low: 10 to 245 bpm
High: 15 to 250 bpm

Test Mode Menu
Sim Rate: OFF, 40, 60, 90, 120, and 150
Fine Tune: 40 to 150 bpm

Speed Key:
25 and 50mm/s

Vol/Clock Menu
NEXT KEY
QRS Vol: OFF, High, and Low
Alarm Vol: High and Low
Month
Day
Year
Hour
Minute

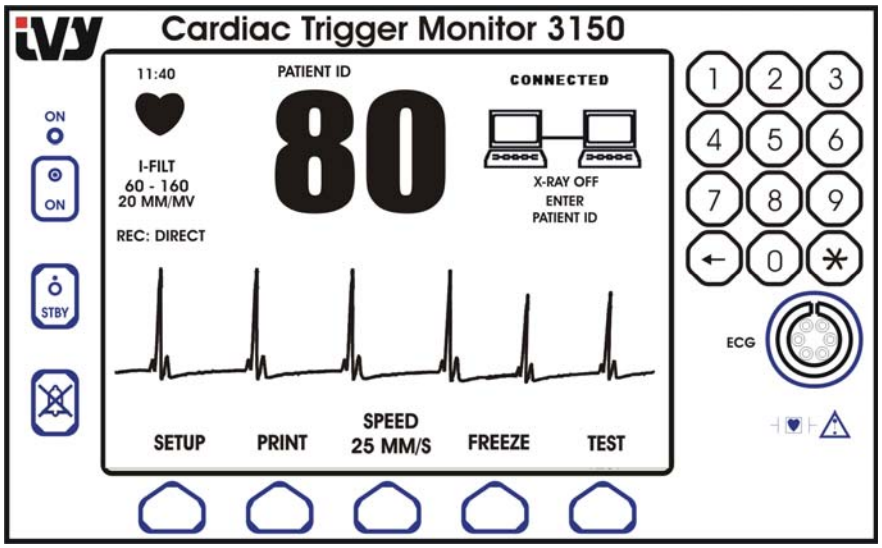
Rec Mode Key:
Direct, Delay, and Timed.

Display

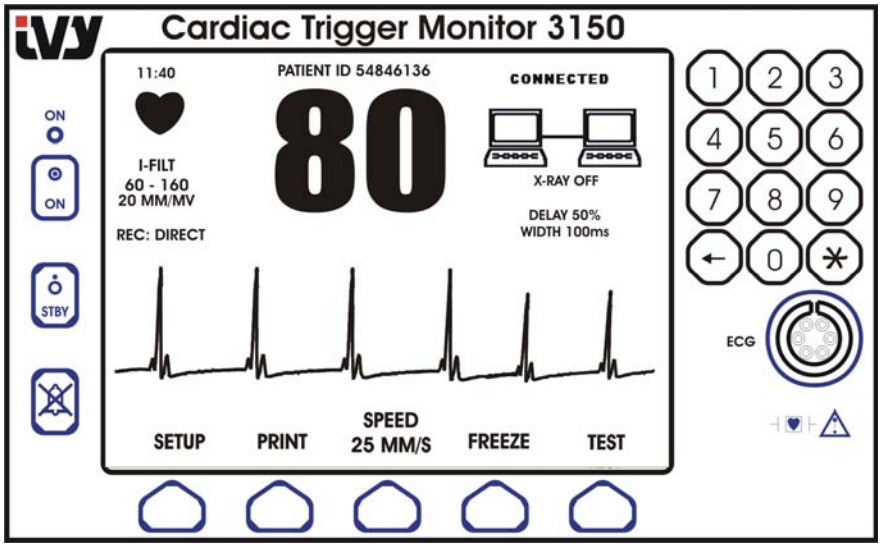
HEART RATE: Displayed in beats per minute (bpm) on the upper part of the screen.

SETUP: Selections made in the menu setup modes (alarm limits, lead selection, and filter on/off) are displayed in small characters at the upper left corner.

ECG: Trace is displayed across the screen moving from left to right.



Floppy Disk Mode display



Ethernet mode display

Alarm Messages

The following alarm indications are displayed in reverse video. Alarm indications appear on the center of the screen and flash once per second. ALARMS PAUSE message (PAUSE) is also displayed on the center of the screen and is displayed in regular video.

ALARMS OFF:	The audible and visual alarms have been turned off.
LEAD OFF:	A lead has become disconnected. This alarm cannot be reset with the ALARM PAUSE key.
HR HIGH:	The high heart rate limit has been exceeded for four seconds.
HR LOW:	The low heart rate limit has been exceeded for four seconds.
ASYSTOLE:	The interval between heartbeats has exceeded six seconds.
PAUSE:	The alarms are paused for 120 seconds.

WARNING: The monitor always powers on with the ALARMS paused for 30 seconds and then they are set to ON.

Rear Panel

The following are located on the rear panel.

POWER INPUT: A receptacle for a standard ac power cord.

When the monitor is connected to another piece of equipment, always make sure that each piece of connected equipment has its own separate ground connection.

Do not attempt to connect cables to these connectors without contacting your Biomedical Engineering Department. This is to ensure the connection complies with leakage current requirements of one of the following applicable standards: UL2601-1, CAN/CSA C22.2 No 601.1-M90, IEC 60601-2-25, and CE-MDD 93/42/EEC. The maximum non-destructive voltage that may be applied to these connectors is 5V.

SYNCHRONIZED OUTPUT: A BNC type connector for the output of the synch pulse indicating the timing of the peak of the R-wave. Limit to 100Hz bandwidth.

PEQ GROUND: Potential Equalization - A ground connection that can be used to ensure that no potential differences can develop between this equipment and other electrical equipment.

FUSE: Replace only with the same type and rating of fuse as indicated on the fuse rating label T.5A 250V (Metric 5x20mm).

ECG X1000 (ECG X500 for GEMS Nuclear Medicine applications only) and SYNCHRONIZED OUTPUT: This is a ¼ stereo phone jack with an ECG analog waveform output on the tip, synch output on the ring, and common on the sleeve. Limit to 100Hz bandwidth.

AUXILIARY: A digital interface for device communication. This auxiliary output provides 5V and -8Vwith a maximum current of 20mA.

ETHERNET: This output provides an Ethernet protocol (10Base-T, IEEE 802.3) to allow the model 3000 Series and the CT scanner console to share data and control options.

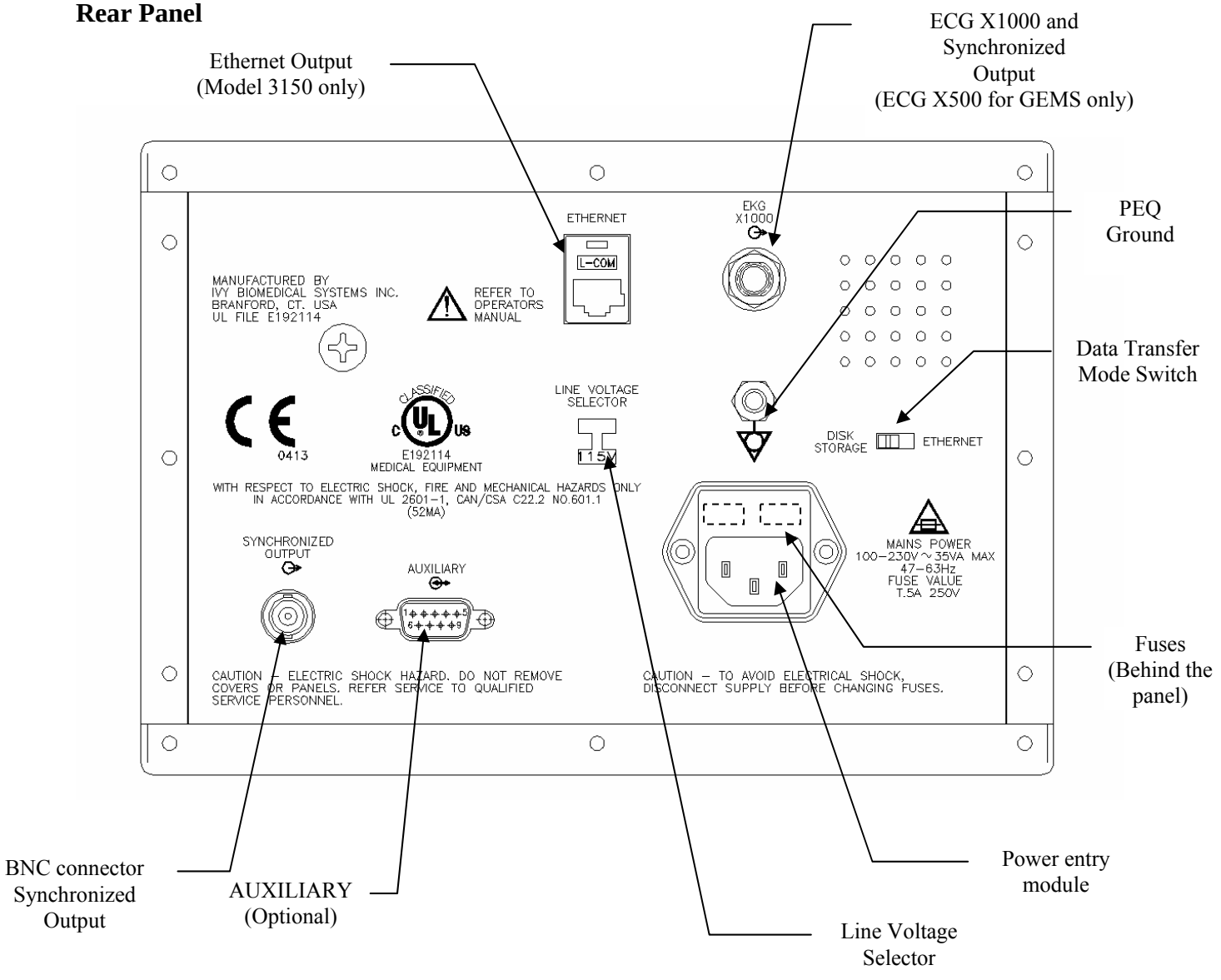
DATA TRANSFER MODE SWITCH: This switch allows the user to select the mode in which the model 3000 Series stores or transfer ECG data. There are two modes: Disk transfer or Ethernet.

LINE VOLTAGE SELECTOR: Switch to select the input voltage range of the device (100 to 230V~, 47 to 63 Hz.).

The use of ACCESSORY equipment not complying with the equivalent safety requirements of this equipment may lead to a reduce level of safety of the resulting system. Consideration relating to the choice shall include:

- Use of the accessory in the PATIENT VICINITY
- Evidence that the safety certification of the ACCESSORY has been performed in accordance to the appropriate IEC 60601-1 and / or IEC 60601-1-1 harmonized national standard.

Rear Panel



Fuse Ratings

The fuses are located behind the cover of the power entry module. To replace the fuses, remove the cover and replace them only with same type and rating T.5A, 250V (Metric 5x20mm).

TESTING AND TROUBLESOOTING

WARNING: Safety tests and internal adjustments should be done by qualified personnel only with appropriate equipment such as oscilloscope and digital voltmeter.

MONITOR TESTING

Press the [TEST] key to test the internal functions of the monitor. You should do this each time you begin monitoring a patient.

The [TEST] function generates a 1 mV pulse at 70 bpm, causing a waveform and a 70 bpm indication on the display and a signal at the rear panel connector. If these indications are not present, contact qualified service personnel.

To test the visual and audio alarms turn on the monitor. Make sure the ALARMS OFF message is not present in the center portion of the display. If the alarms are off press the key. Unplug the patient cable. Check that the LEAD OFF message is displayed on the ECG channel and the audio alarm is on. While pressing the TEST key check for the following to happen: 1) LEAD OFF message disappears, and 2) Monitor starts counting QRS. Release the TEST key and press for three seconds, the message PAUSE and the timer should be displayed on the display, all audio and visual alarms should be off

Under normal operation, no internal adjustment or recalibration is required. Safety tests and internal adjustments should be done by qualified personnel only. Safety checks should be performed at regular intervals or in accordance with local or governmental regulations. In the event that internal adjustment or recalibration is necessary, refer to the Service Addendum for this equipment.

Note:
If no display is visible on the monitor, the monitor is inoperable. Contact qualified personal. When ECG input is >0.5 V, a inoperable condition is indicated by flashing LEAD OFF indicator on the display.

ECG Simulator (Optional)

The model 3000 series can have an optional integrated simulator that is used to verify the integrity of the patient cable, lead wires and electronic circuits involved in the processing of the ECG signal.
The simulator terminals are located in the right side panel of the monitor and have three color coded labels for easy identification. The terminals are used to attach the lead wires. The simulator generates an ECG waveform and heart rate within 40-150bpm range (user selectable). When the simulator is on, a message “SIMULATOR ON” is displayed in the center of the screen below the ECG trace.

ECG Simulator operation

To turn the simulator on and set the heart rate, follow the procedure below:

1. Press the [TEST MODE] key located in the main menu to access the simulator mode menu.

2. Press the key [SIM RATE] to turn the simulator on and toggle through the heart rate options.

3. Press the keys [↑ FINE TUNE ↓] to change the heart rate in increments of one.

4. Press [EXIT] to exit the test mode menu.

NOTE: When the simulator is on, a message “SIMULATOR ON” is displayed in the center of the screen below the ECG trace.

TROUBLESHOOTING

Problem	Verify that:
• Unit does not turn on.	✓ Power cord is plugged into the monitor and the AC outlet. ✓ Line Voltage selector is in the appropriate position. ✓ Fuses are not blown. ✓ The ON switch is pressed.
• Trigger pulse is not functional	✓ Trigger pulse is turned on (red mark over the ECG waveform). ✓ The Auxiliary port connector is plugged into the monitor. ✓ ECG size is optimal (select Lead II)
• Erratic ECG waveform. Heart Rate is not counting.	✓ ECG waveform has enough amplitude (Select Lead II). ✓ Electrodes placement (see ECG section for proper placement diagram). ✓ ECG electrodes have enough conductive gel.
• System Interlock symbol does not show connection (Only 3050, 3100, 3150, and 3200)	✓ Auxiliary port is connected
• Unit does not indicate "ARMED." (Only 3100, 3150, and 3200)	✓ System interlock is connected (auxiliary port connected). ✓ Patient ID is entered. ✓ X ray function is off.
• "DISK WRITE FAILED" message appeared. (Only 3100 and 3150)	✓ There is a 3.5" floppy disk inside the floppy drive. ✓ The floppy drive is not full.

WARNING: The following procedures include voltage checks. These procedures should be done by qualified personnel only with appropriate equipment such as oscilloscope and digital voltmeter.

FUNCTIONAL TESTS

Equipment Required

Oscilloscope (2 channel 100Mhz)
Digital Voltmeter
ECG Simulator

Unregulated Voltages

Set the line voltage to the voltage selected on the rear panel. Apply power. Measure the voltage at VI (TP10) located in the 5148-00-01 Mother Board. The voltage should be +24.0V to +34.0V.

Regulated Voltages

Measure the following regulated voltages. Their test points are located in the 5148-00-01 Mother Board:

Voltage	Reference	Tolerance
+12V	TP15	+11.4 to +12.4V
–12V	TP14	+12 reading –0.5V
+5V	TP12	+4.8 to + 5.2V
+8V	TP13	+7.5 to +8.4V
–8V	TP11	–7.5 to –8.5V

Isolated Power Supplies

Reference the scope to Isolated Ground (TP7). Measure the voltages listed below:

Voltage	Reference	Tolerance
+6.5V	TP6	+6.50 to +7.00V
-6.5V	TP8	-6.50 to -7.00V
+5V	TP21	+4.75 to +5.25V
-5V	TP22	-4.90 to -5.10V

ECG and Heart Rate

Connect the ECG simulator. Set the simulator as follows:

Amplitude .3mV
Rate 100BPM

Press the TEST key and check for the test pulse on the display.
Connect the scope to the rear panel X1000 output. Verify that the TEST signal is 0.00V ±0.05V to 1.00V ±0.05V.
Check the pulse width for 100mS ±10mS.
Reduce the amplitude in the ECG simulator to 150µV. (Set the simulator to .1mV and the monitor to Lead II). The monitor must not trigger. Verify that the ASYSTOLE alarm occurs.
Disconnect the simulator. Short the patient leads together. Remove one lead at a time for each lead setting as indicated below.

SELECT	REMOVE	VERIFY
L I	Black (LA) + White (RA) - Red (LL) com	ECG trace is clamped to 0.
L II	Black (LA) com Red (LL) +	LEAD OFF alarm tag is displayed.
L III	White (RA) com	

Press the TEST key with the LEAD OFF alarm present and verify that the LEAD OFF tag disappears.

Audio
Press the TEST key. Confirm the operation of the QRS audio. Check the HIGH, LOW and OFF menu selections. Cause an alarm condition. Verify the operation of the audio alarm. Check the HIGH and LOW menu selections.

Rear Panel Outputs
Connect the ECG simulator to the input. Set the simulator as follows:

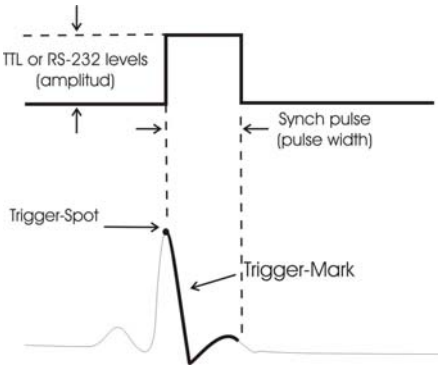
Amplitude:	1 mV
Rate:	100BPM

Set the monitor to FILTER OFF. Measure the amplitude at the ECG X1000 rear panel output.

Lead I	1 V peak (0.90Vp to 1.10Vp)
Lead II	1.5 V peak (1.35Vp to 1.65Vp)
Lead III	0.5 V peak (0.45Vp to 0.55Vp)

Measure the TRIGGER pulse at the rear panel ECG X1000 output (ring). Set the TRIGGER ON.

Refer to the following matrix for customer requirements and the timing of the trigger pulse compared to the ECG waveform.



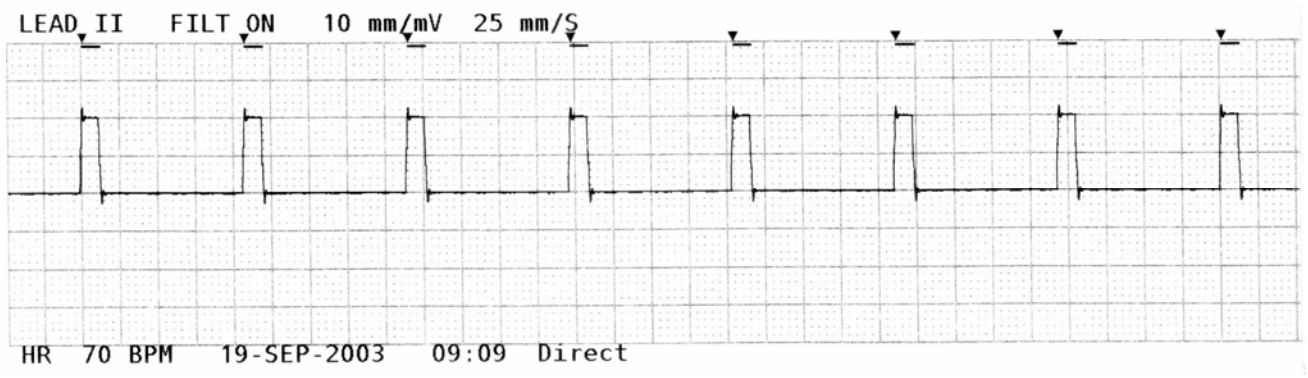
Trigger pulse width options			
1ms	50ms	100ms	150ms
GEMS ISRAEL ELGEMS		ELSCINT GEMS (CT) MARCONI PHILIPS SIEMENS SMV TOSHIBA	ADAC IMATRON IVY

Trigger pulse amplitude options			
0V to 5V Positive Edge	5V to 0 V Negative Edge	-11V to +11V	0V to 4.2V
ADAC ELSCINT GEMS (CT) IMATRON IVY MARCONI PHILIPS SIEMENS SMV TOSHIBA	ELSCINT PHILIPS SIEMENS	ELGEMS GEMS ISRAEL	SPECIAL ORDER HIGH CURRENT OPTION

Verify that the trigger pulse is also present at the rear panel Synchronized Output (BNC connector) and at Auxiliary output (pin 11) for the models 3050, 3100, 3150, and 3200.

Verify that the trace is displayed in RED beginning at the peak of the test signal and corresponds with the trigger output pulse. Press the TRIGGER key in the ECG menu to disable the Trigger Mark and the trigger pulse.

Recorder (if applicable)
Press and hold the TEST key. After the waveform has stabilized press the PRINT key and verify proper operation as shown below:

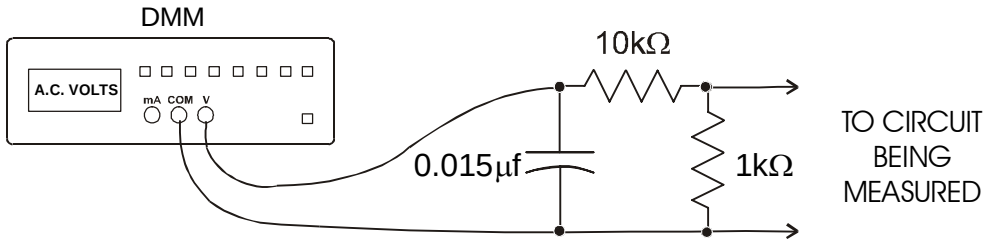


Verify that the correct date and time is printed in the lower margin.

Press the paper eject button to open the door at the front of the recorder. Check for the DOOR OPEN message to be displayed in the lower left corner of the display.

Remove the paper and close the door. Verify that the PAPER OUT message is displayed. Load the recorder with paper.

Leakage Tests
Use a leakage tester or the AC voltage range on a digital voltmeter.
Using the DMM, select AC VOLTS and the 200 mV range. Connect the leakage filter as shown below.



Connect the meter from the rear panel PEQ ground of the monitor to line cord ground.
Measure the leakage with the following conditions.

Unit Grounded - the current must be < 20 μA
Ground Broken - the current must be < 30 μA
Ground Broken, reversed polarity - the current must be < 30 μA

Connect the patient cable to the ECG input. With the monitor on, measure the leakage from the shorted patient leads to the HOT side of the line. The leakage must be <10 μA for 120V units.

Simulator/Functional Check
If a simulator is installed, connect the lead wires to the side terminals and verify operation in all lead configurations. Connect the ECG simulator and check for the correct heart rate and ECG display. If a recorder is present, verify operation.

MAINTENANCE AND CLEANING

The Monitor

When necessary, clean the exterior surfaces of the monitor with a cloth or swab dampened with a warm water and mild detergent solution. Do not allow liquids to enter the interior of the instrument.

CAUTION:

- Do not autoclave, pressure sterilize, or gas sterilize the monitor.
- Do not soak or immerse in any liquid.
- Use cleaning solution sparingly. Excessive solution can flow into the monitor and cause damage to internal components.
- Do not touch, press or rub the display and covers with abrasive cleaning compounds, instruments, brushes, rough surface materials, or bring them into contact with anything that could scratch the display or the covers.
- Do not use petroleum based or acetones solutions, or other harsh solvents, to clean the monitor.

Patient Cables

Do not autoclave the patient cables.

Wipe the cables using a mild detergent solution. Never submerge the cables in any liquid or allow liquids to enter the electrical connections.

Preventive Maintenance

ECG

Check before connecting the monitor to a new patient that:

- Cables and Leads are clean and intact.
- The LEAD OFF message is displayed when the patient cable is connected, but the patient leads are not connected. Connecting the patient leads together should make the message disappear.
- The BNC Interconnect cable is clean and intact.

NOTE: There are no user serviceable items contained in the model 3000 Series.

ACCESSORIES

ECG

ECG 3 lead Patient Cable (model 3000 only)	590161
Set of three lead wires (use with 590161)	590162
Low noise 3 Lead ECG Patient Cable	590317
Low noise 3 Lead ECG Patient Cable with 1kohm resistors	590323
Set of three radiotranslucent lead wires (use with 590317 or 590323))	590318
Box of 10 rolls of recorder paper	590035
SSE Radiotranslucent ECG Electrodes, Pouch of 30	590290
Radiotranslucent ECG electrodes, Pouch of 30	590322
Low impedance radiotranslucent ECG electrodes, Pouch of 30	590342
Nuprep Gel 4oz tube	590291
Box of 10 IBM preformatted 3.5" floppy disks (Unavailable for Model 3000, 3050, and 3200)	590292

To order accessories please contact customer service:

- Tele: (800) 247-4614 ext 106
- Tele: (203) 481-4183 ext 106
- Fax: (203) 481-8734
- E-mail: ivysales@ivybiomedical.com

Disposal

Disposal of devices or consumables must be done in accordance with local, state, and federal laws and regulations.

WEEE Directive 2002/96/EC.- Do not dispose of WEEE products in general waste. At the end of life of product contact IVY Biomedical Systems, Inc. customer service for return instructions.

SPECIFICATIONS

ECG

Lead Selection:	LI, LII, LIII menu selectable.	
Patient Cable:	6-Pin AAMI Standard connector	
Isolation:	Isolated from ground related circuits by >4 kV rms, 5.5 kV peak	
CMRR:	≥90 dB with patient cable and 51 kΩ/47 nF imbalance	
Input Impedance:	≥20 MΩ at 10 Hz with patient cable	
Frequency Response LCD:	Filtered:	0.5 to 25 Hz
	Unfiltered:	0.5 to 45 Hz
Frequency Response X1000 output:	Filtered:	0.5 to 25 Hz
	Unfiltered:	0.2 to 100 Hz
Input Bias Current:	Any lead configuration <200 nA dc maximum	
Electrode Offset Potential:	±0.5 V DC	
Lead Off sensing current:	56nA	
Noise:	<20 μV peak-to-peak, referred to the input with all leads connected through 51 kΩ/47 nF to ground	
Defibrillator Protection:	Protected against 360 J discharge and electrosurgery potentials Recovery time <6s	
Leakage Current:	<10 μA at normal condition	
Electrosurgical Interference Protection:	Standard. Recovery time: <6 seconds.	
Notch Filter:	50/60 Hz (automatic).	

Cardiotach

Range:	15 to 300 bpm
Accuracy:	±1%
Resolution:	1 bpm
Sensitivity:	300 μV peak
Heart Rate Averaging:	Exponential averaging calculated once a second with a maximum response time of 8 seconds.
Response Time:	≤ 8 seconds
Tall T Wave Rejection:	Rejects T waves ≤R wave

Pacer Pulse Rejection

Width:	0.1 to 2 ms at ±2 to ±700 mV
Overshoot:	Between 4 to 100ms and not greater than 2mV.
Fast ECG signals:	2mV/100µs.
Detector disabling:	None.

NOTE: Pacemaker pulses are not present in any rear panel outputs.

Alarms

High Rate:	15 to 250 bpm in 5 bpm increments
Low Rate:	10 to 245 bpm in 5 bpm increments
Asystole:	R to R interval >6 seconds
Lead Off:	Detached lead or offset potential >0.5 V

Simulator Option

ECG waveform amplitude:	1mV
Simulator rate:	Variable rate in steps of 40, 60, 90, 120 and 150 BPM Also manually adjustable in increments of 1 BPM.

Test Mode

ECG:	1 mV/100 ms @ 70 bpm

Display

Type:	Active Matrix TFT Color LCD (640x480)
Trace:	Single ECG trace with “freeze” function.
Screen Size:	13.25cm x 9.94cm, 16.5cm (6.5in) diagonal
Sweep Speed:	25, 50 mm/s
Aspect ratio:	0.4 (standard). User selectable.

Internal Floppy Drive

Type:	Mitsumi D359M3D
Capacity:	1.474 MB
Size:	10.16cm W x 2.54cm H x 14.4cm D
Data Transfer:	500 k bit/sec
Media Format:	IBM PC High Density.

Ethernet Module

Network Interface:	RJ45 (10BASE-T)
Ethernet compatibility:	Version 2.0/IEEE 802.3
Protocol:	TCP/IP
Packet Rate:	250ms
ECG Data Rate:	240 samples/s
Default IP address:	10.44.22.21
Data Rates:	300bps to 115.2Kbps
Standard Temperature:	32 to 158°F (0 to 70°C)
Size:	1.574 x 1.929 in (40mm x 49mm)

Mechanical

Size:	Height: 6.70in. (17.2cm) Width: 9.25in. (33.5cm) Depth: 9.21in. (23.4cm)
Weight:	6.5lbs (2.9kg)

Recorder (optional)

Writing Method:	Direct Thermal
Number of Traces:	1
Modes:	Direct - Manual Recording Timed - Print button initiates a 30 second recording Delay - Recorder is activated by an alarm
Paper Speeds:	25 and 50 mm/s
Resolution:	Vertical - 200 dots/in. Horizontal - 600 dots/in. at ≤25 mm/s 400 dots/in. at >25 mm/s
Frequency Response:	>100 Hz at 50 mm/s
Data Rate:	400 samples/s/trace

Synchronized Output (Trigger)

Phase Delay from Electrode Leads to Trigger Output:	< 3 ms
R to R Trigger Accuracy:	±50µs typical @ 1 mV input
Pulse width:	1 to 150ms (standard 150ms)
Pulse amplitude:	0 to 5V or ± (0 to 12V)
Output Impedance:	<100 Ω
Sensitivity and Threshold Adjustment:	Fully Automatic

Real Time Clock

Resolution:	1 minute
Display:	24 hours
Power Requirement:	The real time clock keeps time if the monitor has power or not. The clock is powered by a dedicated battery whose life is minimum 4 years at a temperature of 25°C

Environmental

Operating Temperature Range:	5°C to 35°C
Storage Temperature Range:	-5°C to 60°C
Relative Humidity:	0-90% non-condensing
Atmospheric Pressure:	500-1060 mbar

Power Requirements

Voltage Input:	100 to 230V~
Line Frequency:	47 to 63 Hz
Fuses Type and Rating:	T.5A, 250V (Metric 5x20mm)
Maximum ac Power Consumption:	35 VA

Regulatory

Unit meets or exceeds the specifications for the AAMI Cardiac Monitor Standard EC-13, UL2601-1, CAN/CSA C22.2 No 601.1-M90, CDN MDR (CMDCAS), IEC 60601-2-25, IEC 60601-2-27, MDD.93/42/EEC, CE 0143, ISO 13485:1996, and FDA/CGMP.

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BOARD LAYOUTS AND SCHEMATICS DIAGRAMS

1. Adult 3 lead and ECG peak detector board (Mother board)	5148-00-01
2. ECG Isolated input board	5150-00-01
3. Power Supply board	5151-00-01
4. ECG Simulator board	5160-00-01

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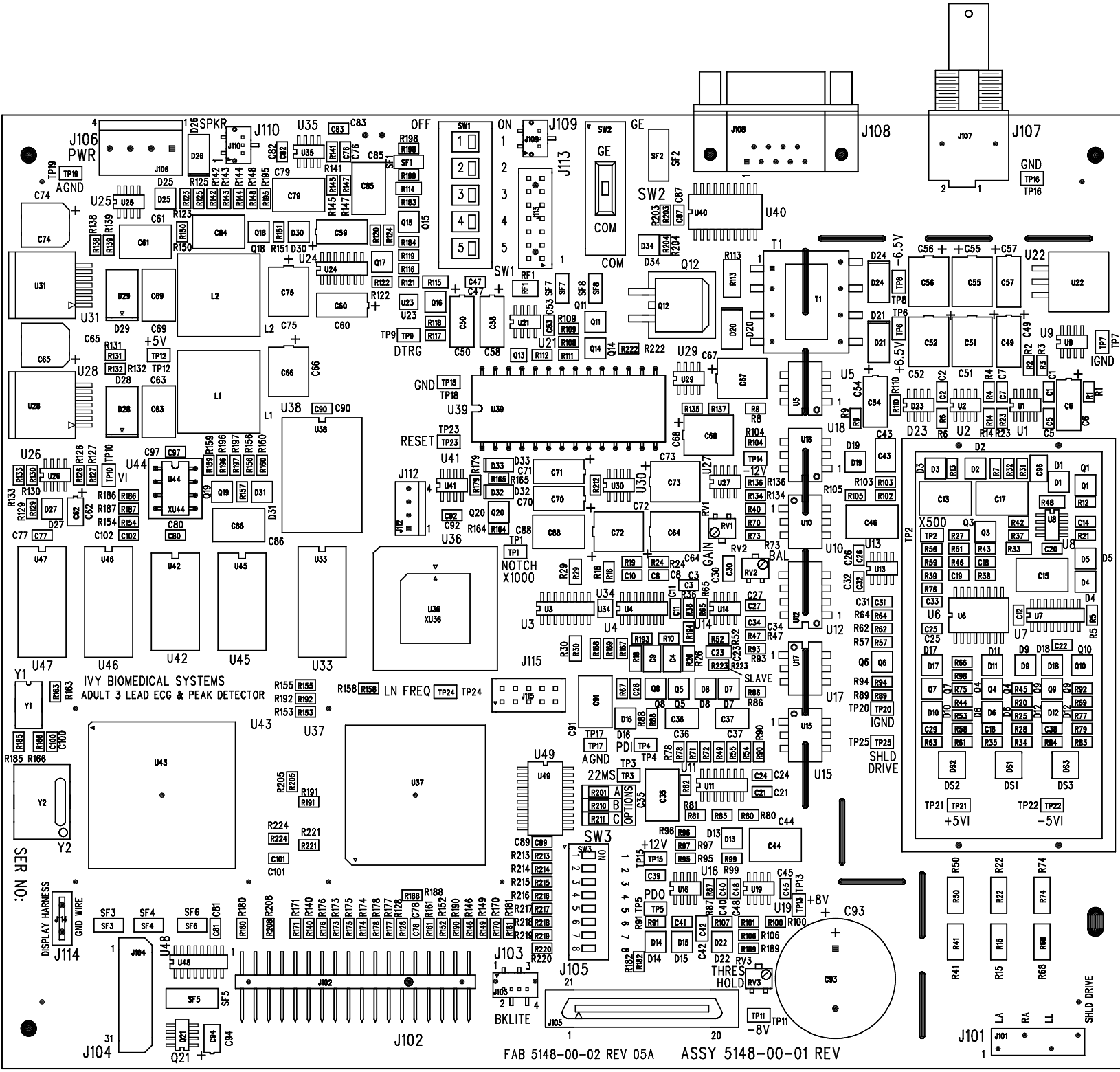
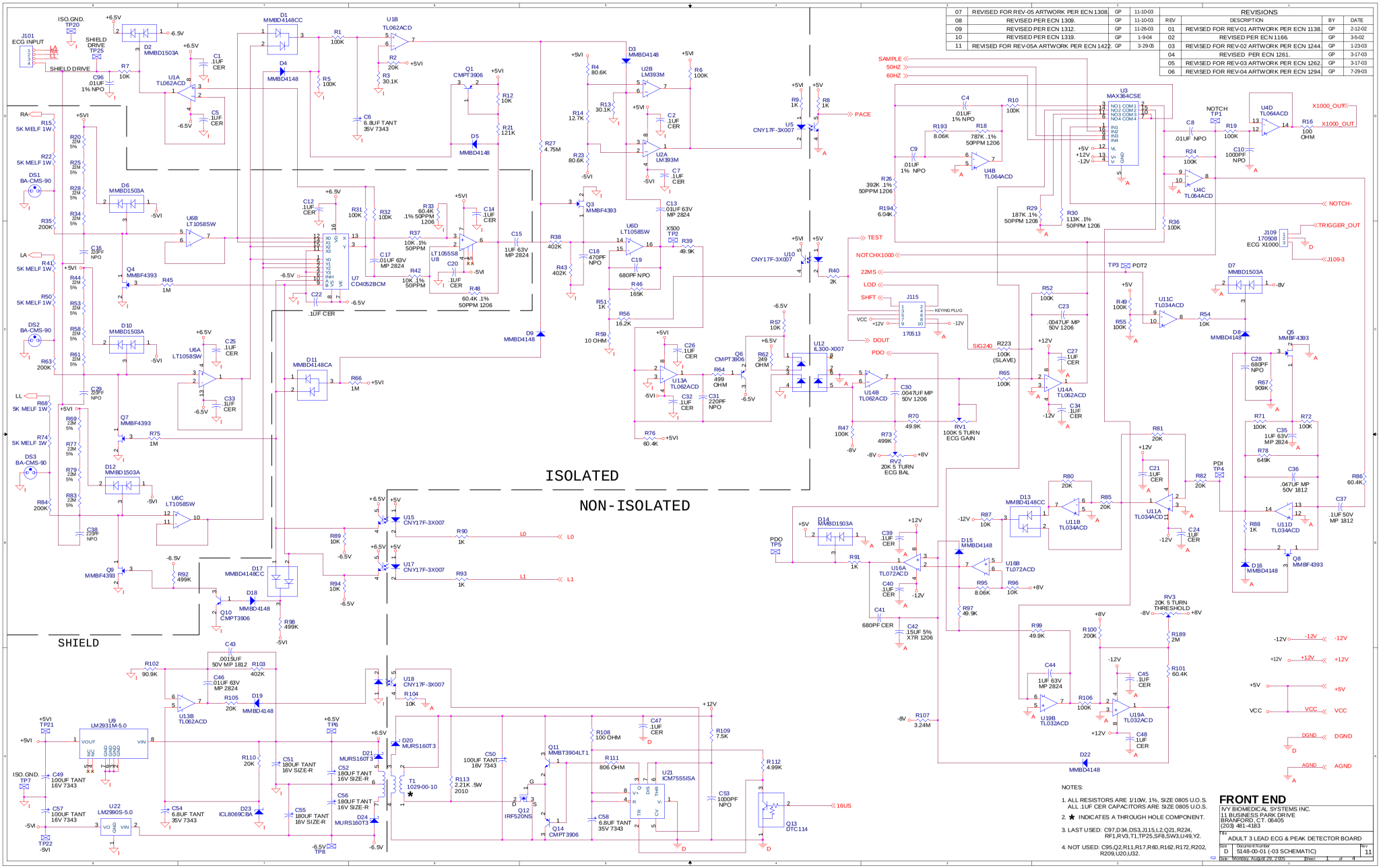
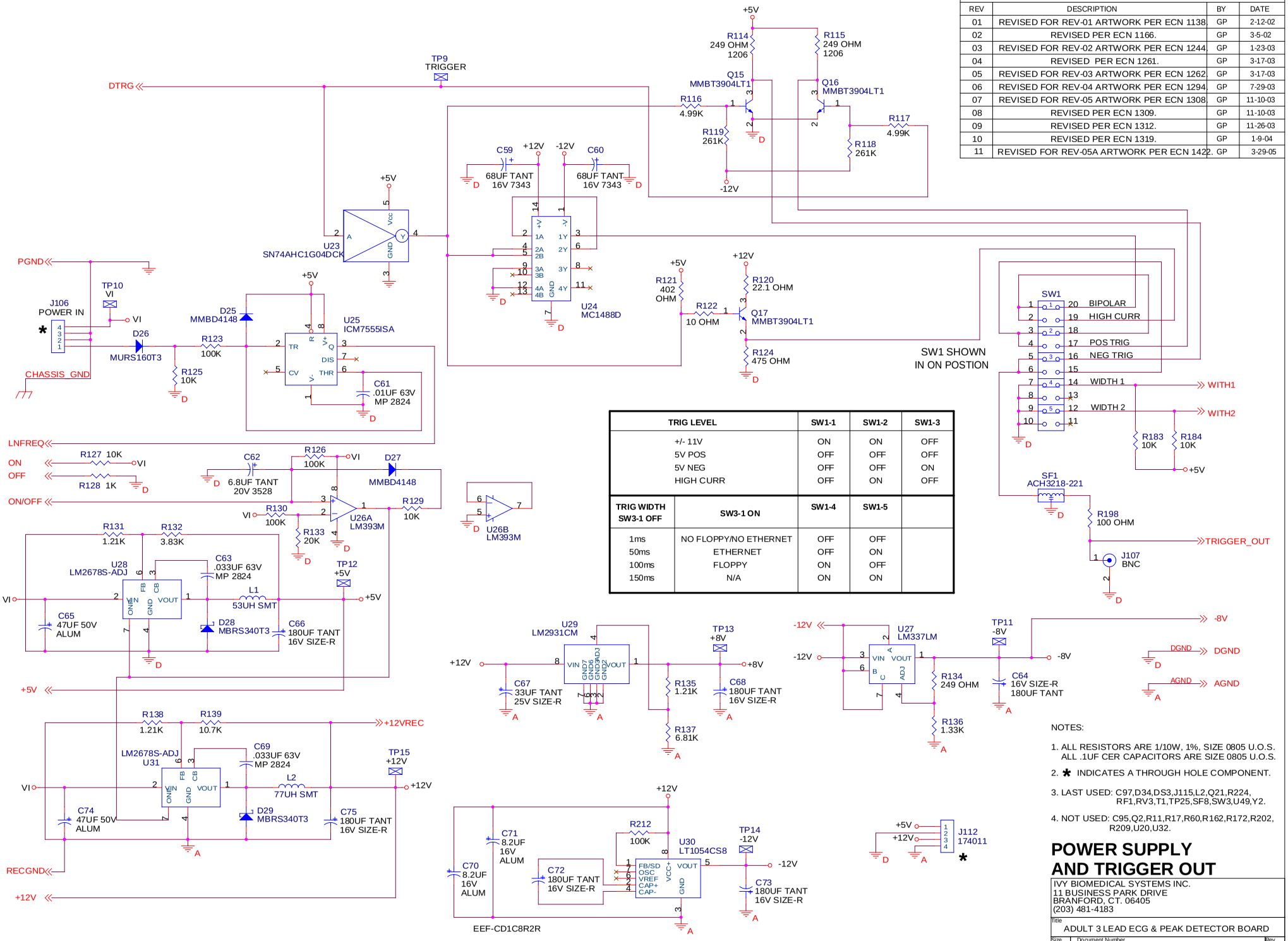


1 SILKSCREEN


ISOLATED
NON-ISOLATED
SHIELD
FRONT END
IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT. 06405
(203) 481-4183
ADULT 3 LEAD ECG & PEAK DETECTOR BOARD
51-48-00-01 (-03 SCHEMATIC)
Monday, August 29, 2005
NOTES:
1. ALL RESISTORS ARE 1/10W, 1%, SIZE 0805 U.O.S. ALL .1UF CER CAPACITORS ARE SIZE 0805 U.O.S.
2. ✱ INDICATES A THROUGH HOLE COMPONENT.
3. LAST USED: C97,D34,DS3,J115,L2,Q21,R224, RF1,RV3,T1,TP25,SF8,SW3,U49,Y2.
4. NOT USED: C95,Q2,R11,R17,R60,R162,R172,R202, R209,U20,U32.

REVISIONS			
REV	DESCRIPTION	BY	DATE
01	REVISED FOR REV-01 ARTWORK PER ECN 1138.	GP	2-12-02
02	REVISED PER ECN 1166.	GP	3-5-02
03	REVISED FOR REV-02 ARTWORK PER ECN 1244.	GP	1-23-03
04	REVISED PER ECN 1261.	GP	3-17-03
05	REVISED FOR REV-03 ARTWORK PER ECN 1262.	GP	3-17-03
06	REVISED FOR REV-04 ARTWORK PER ECN 1294.	GP	7-29-03
07	REVISED FOR REV-05 ARTWORK PER ECN 1308.	GP	11-10-03
08	REVISED PER ECN 1309.	GP	11-10-03
09	REVISED PER ECN 1312.	GP	11-26-03
10	REVISED PER ECN 1319.	GP	1-9-04
11	REVISED FOR REV-05A ARTWORK PER ECN 1422.	GP	3-29-05


REVISIONS
REV | DESCRIPTION | BY | DATE
01 | REVISED FOR REV-01 ARTWORK PER ECN 1138. | GP | 2-12-02
02 | REVISED PER ECN 1166. | GP | 3-5-02
03 | REVISED FOR REV-02 ARTWORK PER ECN 1244. | GP | 1-23-03
04 | REVISED PER ECN 1261. | GP | 3-17-03
05 | REVISED FOR REV-03 ARTWORK PER ECN 1262. | GP | 3-17-03
06 | REVISED FOR REV-04 ARTWORK PER ECN 1294. | GP | 7-29-03
07 | REVISED FOR REV-05 ARTWORK PER ECN 1308. | GP | 11-10-03
08 | REVISED PER ECN 1309. | GP | 11-10-03
09 | REVISED PER ECN 1312. | GP | 11-26-03
10 | REVISED PER ECN 1319. | GP | 1-9-04
11 | REVISED FOR REV-05A ARTWORK PER ECN 1422. | GP | 3-29-05
TRIG LEVEL | SW1-1 | SW1-2 | SW1-3
+/- 11V | ON | ON | OFF
5V POS | OFF | OFF | OFF
5V NEG | OFF | OFF | ON
HIGH CURR | OFF | ON | OFF
TRIG WIDTH SW3-1 OFF | SW3-1 ON | SW1-4 | SW1-5
1ms | NO FLOPPY/NO ETHERNET | OFF | OFF
50ms | ETHERNET | OFF | ON
100ms | FLOPPY | ON | OFF
150ms | N/A | ON | ON
SW1 SHOWN IN ON POSTION
NOTES:
1. ALL RESISTORS ARE 1/10W, 1%, SIZE 0805 U.O.S. ALL .1UF CER CAPACITORS ARE SIZE 0805 U.O.S.
2. * INDICATES A THROUGH HOLE COMPONENT.
3. LAST USED: C97,D34,DS3,J115,L2,Q21,R224, RF1,RV3,T1,TP25,SF8,SW3,U49,Y2.
4. NOT USED: C95,Q2,R11,R17,R60,R162,R172,R202, R209,U20,U32.
POWER SUPPLY AND TRIGGER OUT
IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT. 06405
(203) 481-4183
Title
ADULT 3 LEAD ECG & PEAK DETECTOR BOARD
Size C
Document Number 5148-00-01 (-03 SCHEMATIC)
Rev 11
Date: Monday, August 29, 2005
Sheet 2 of 4
EEF-CD1C8R2R

OPTIONS SETTINGS

OPTIONS	REFERENCE	INSTALLED	NOT INSTALLED
OPTION A	R201	3000, 3050, 3100	3200
OPTION B	R210	FOR FUTURE USE	FOR FUTURE USE
OPTION C	R211	FOR FUTURE USE	FOR FUTURE USE

SW3 SWITCH SETTINGS

SWITCH	ON	OFF
SW3-1	3050, 3100, 3200	3000, 3240 (SLAVE)
SW3-2	MONITOR DEFAULTS	TRIGGER DEFAULTS
SW3-3	300 BPM MAX	261 BPM MAX
SW3-4	LATCHING TEST ENABLED	NO LATCHING TEST ENABLED
SW3-5	ECG SIMULATOR	NO ECG SIMULATOR
SW3-6	3240 (SLAVE)	NO 3240 (SLAVE)
SW3-7	FOR FUTURE USE	FOR FUTURE USE
SW3-8	FOR FUTURE USE	FOR FUTURE USE

REVISIONS

REV	DESCRIPTION	BY	DATE
01	REVISED FOR REV-01 ARTWORK PER ECN 1138.	GP	2-12-02
02	REVISED PER ECN 1166.	GP	3-5-02
03	REVISED FOR REV-02 ARTWORK PER ECN 1244.	GP	1-23-03
04	REVISED PER ECN 1261.	GP	3-17-03
05	REVISED FOR REV-03 ARTWORK PER ECN 1262.	GP	3-17-03
06	REVISED FOR REV-04 ARTWORK PER ECN 1294.	GP	7-29-03
07	REVISED FOR REV-05 ARTWORK PER ECN 1308.	GP	11-10-03
08	REVISED PER ECN 1309.	GP	11-10-03
09	REVISED PER ECN 1312.	GP	11-26-03
10	REVISED PER ECN 1319.	GP	1-9-04
11	REVISED FOR REV-05A ARTWORK PER ECN 1422.	GP	3-29-05

CONNECTIONS WITH SW2 IN G.E. POSITION

J108 * AUX
GND
-8V
DCNCT-
TRIGGER_OUT
XOFF
+5V

NOTES:

1. ALL RESISTORS ARE 1/10W, 1%, SIZE 0805 U.O.S. ALL .1UF CER CAPACITORS ARE SIZE 0805 U.O.S.
2. * INDICATES A THROUGH HOLE COMPONENT.
3. LAST USED: C97,D34,DS3,J115,L2,Q21,R224, RF1,RV3,T1,TP25,SF8,SW3,U49,Y2.
4. NOT USED: C95,Q2,R11,R17,R60,R162,R172,R202, R209,U20,U32.

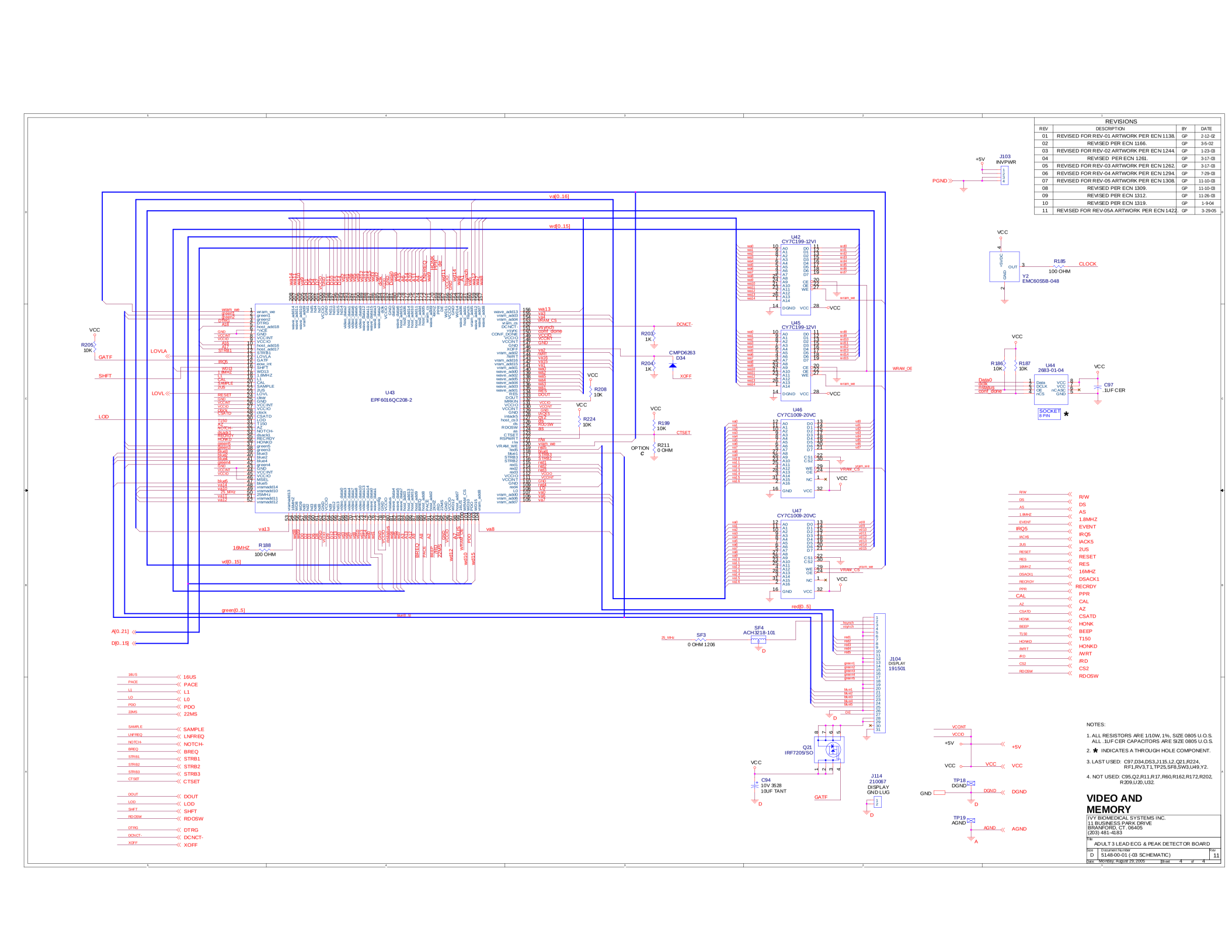
PROCESSOR, A/D AND COM

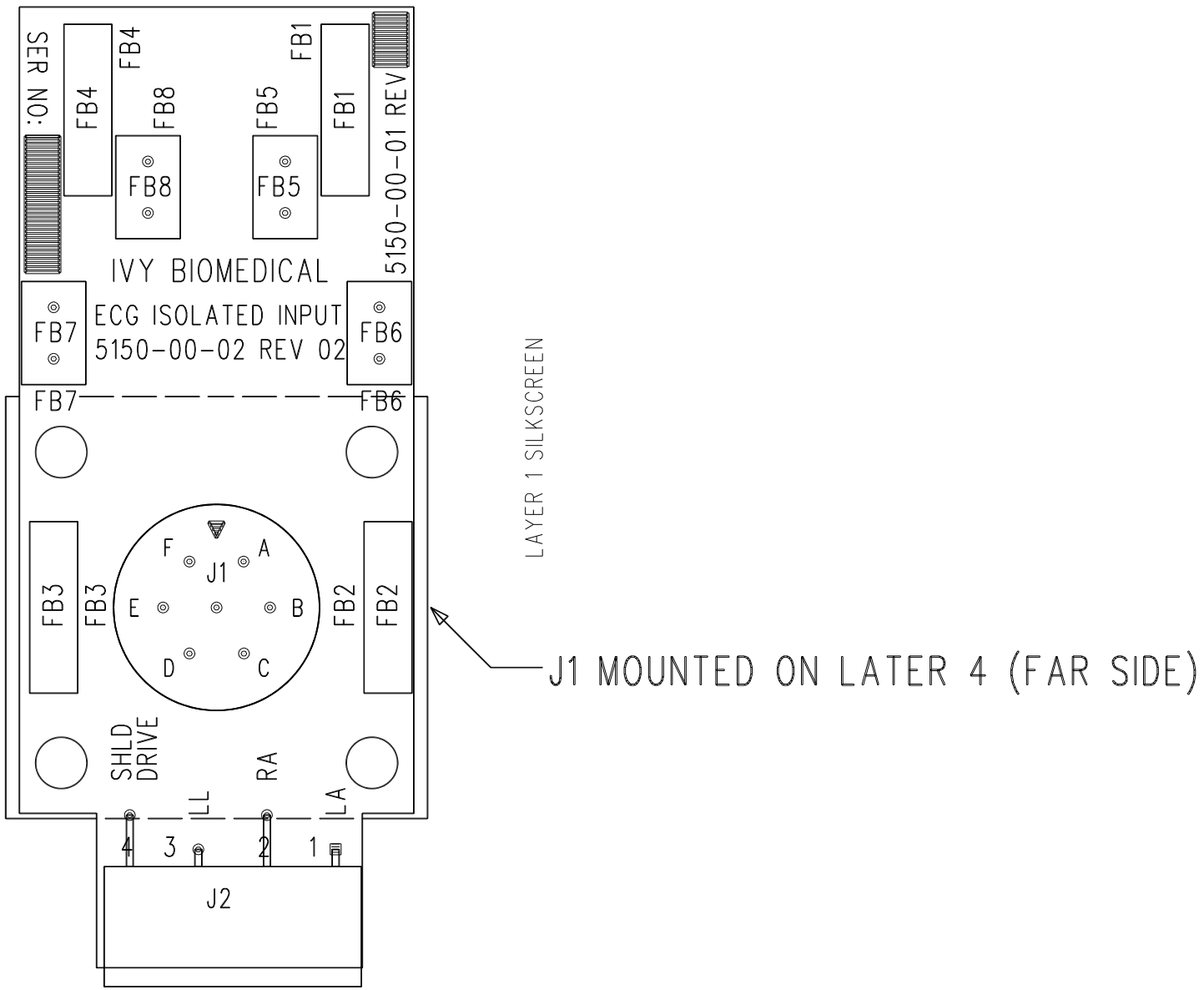
IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT. 06405
(203) 481-4183

Title: ADULT 3 LEAD ECG & PEAK DETECTOR BOARD

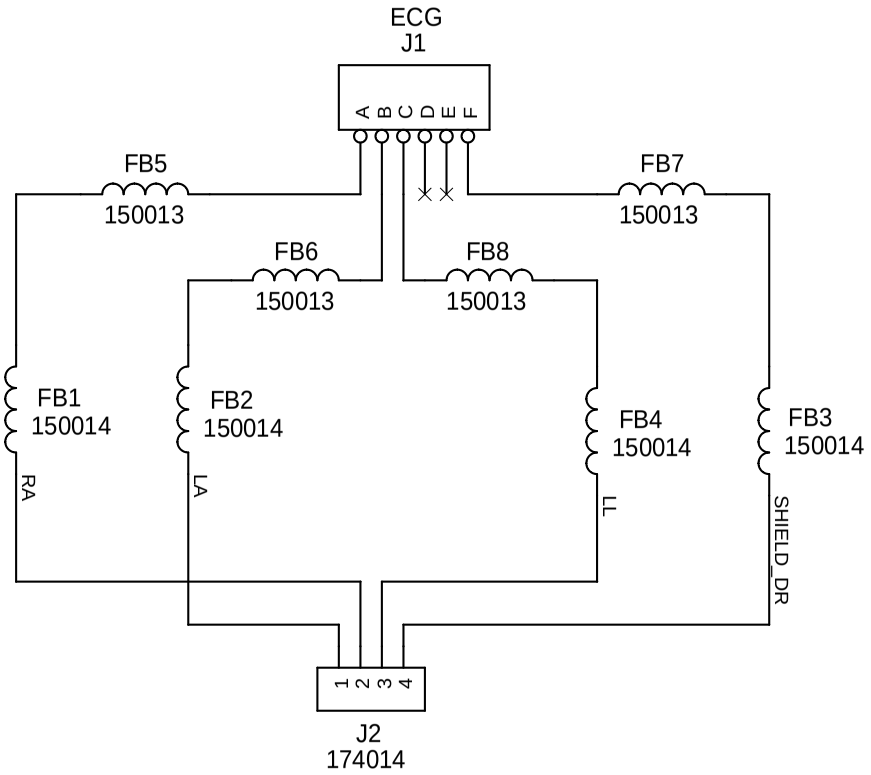
Size: D | Document Number: 5148-00-01 (-03 SCHEMATIC) | Rev: 11

Date: Monday, August 29, 2005 | Sheet 3 of 4

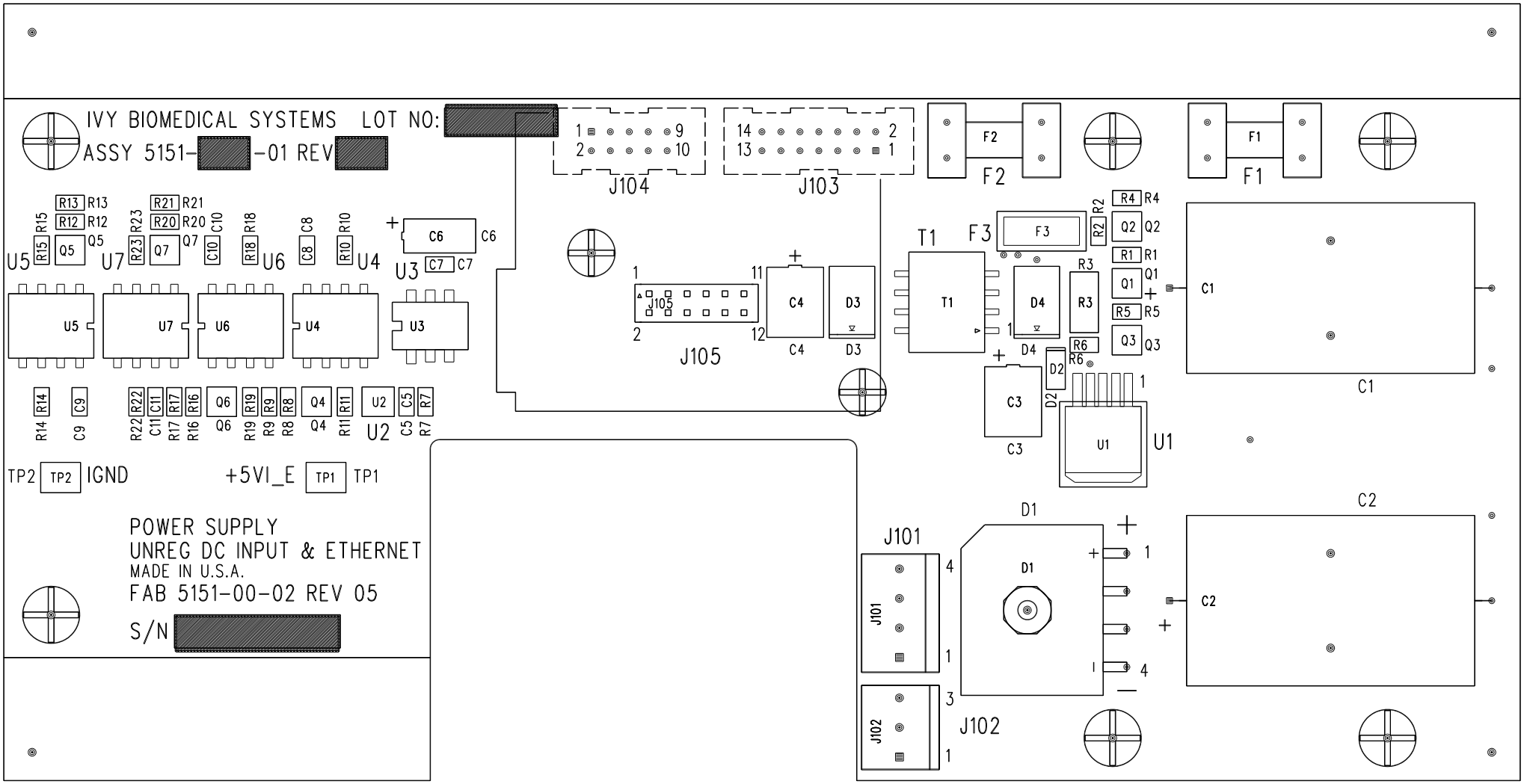

REVISIONS
REV | DESCRIPTION | BY | DATE
01 | REVISED FOR REV-01 ARTWORK PER ECN 1138. | GP | 2-12-02
02 | REVISED PER ECN 1166. | GP | 3-5-02
03 | REVISED FOR REV-02 ARTWORK PER ECN 1244. | GP | 1-23-03
04 | REVISED PER ECN 1261. | GP | 3-17-03
05 | REVISED FOR REV-03 ARTWORK PER ECN 1262. | GP | 3-17-03
06 | REVISED FOR REV-04 ARTWORK PER ECN 1294. | GP | 7-29-03
07 | REVISED FOR REV-05 ARTWORK PER ECN 1308. | GP | 11-10-03
08 | REVISED PER ECN 1309. | GP | 11-10-03
09 | REVISED PER ECN 1312. | GP | 11-26-03
10 | REVISED PER ECN 1319. | GP | 1-9-04
11 | REVISED FOR REV-05A ARTWORK PER ECN 1422. | GP | 3-29-05
J103 INVPWR
+5V
PGND
va[0..16]
wd[0..15]
U42 CY7C199-12VI
U45 CY7C199-12VI
U46 CY7C1009-20VC
U47 CY7C1009-20VC
WRAM_OE
wram_we
wram_oe
VCC
R185 100 OHM
CLOCK
Y2 EMC60S5B-048
R186 10K
R187 10K
U44 2683-01-04
SOCKET 8 PIN
C97 .1UF CER
U43 EPF6016QC208-2
R205 10K
GATF
SHFT
LOVLA
LOVL
LOD
R203 1K
R204 1K
CMPD6263 D34
XOFF
DCNCT-
R208 10K
R224 10K
R199 10K
CTSET
R211 0 OHM
OPTION C
va13
va8
16MHZ
R188 100 OHM
vd[0..15]
A[0..21]
D[0..15]
green[0..5]
blue[0..5]
red[0..5]
SF3 0 OHM 1206
SF4 ACH3218-101
J104 DISPLAY 191501
Q21 IRF7205/SO
C94 10V 3528 10UF TANT
J114 210067 DISPLAY GND LUG
TP18 DGND
TP19 AGND
R/W
DS
AS
1.8MHZ
EVENT
IRQ5
IACK5
2US
RESET
RES
16MHZ
DSACK1
RECRDY
PPR
CAL
AZ
CSATD
HONK
BEEP
T150
HONKD
AWRT
ARD
CS2
RDOSW
16US
PACE
L1
L0
PDO
22MS
SAMPLE
LNFREQ
NOTCH-
BREQ
STRB1
STRB2
STRB3
CTSET
DOUT
LOD
SHFT
RDOSW
DTRG
DCNCT-
XOFF
NOTES:
1. ALL RESISTORS ARE 1/10W, 1%, SIZE 0805 U.O.S. ALL .1UF CER CAPACITORS ARE SIZE 0805 U.O.S.
2. ★ INDICATES A THROUGH HOLE COMPONENT.
3. LAST USED: C97,D34,DS3,J115,L2,Q21,R224, RF1,RV3,T1,TP25,SFB,SW3,U49,Y2.
4. NOT USED: C95,Q2,R11,R17,R60,R162,R172,R202, R209,U20,U32.
VIDEO AND MEMORY
IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT. 06405
(203) 481-4183
Title
ADULT 3 LEAD ECG & PEAK DETECTOR BOARD
Size D
Document Number 5148-00-01 (-03 SCHEMATIC)
Rev 11
Date Monday, August 29, 2005
Sheet 4 of 4


SER NO:
FB4
FB4
FB8
FB8
FB5
FB5
FB1
FB1
5150-00-01 REV
IVY BIOMEDICAL
ECG ISOLATED INPUT
5150-00-02 REV 02
FB7
FB6
FB7
FB6
FB3
FB3
FB2
FB2
J1
F
A
E
B
D
C
SHLD
DRIVE
RA
LL
LA
4
3
2
1
J2
LAYER 1 SILKSCREEN
J1 MOUNTED ON LATER 4 (FAR SIDE)

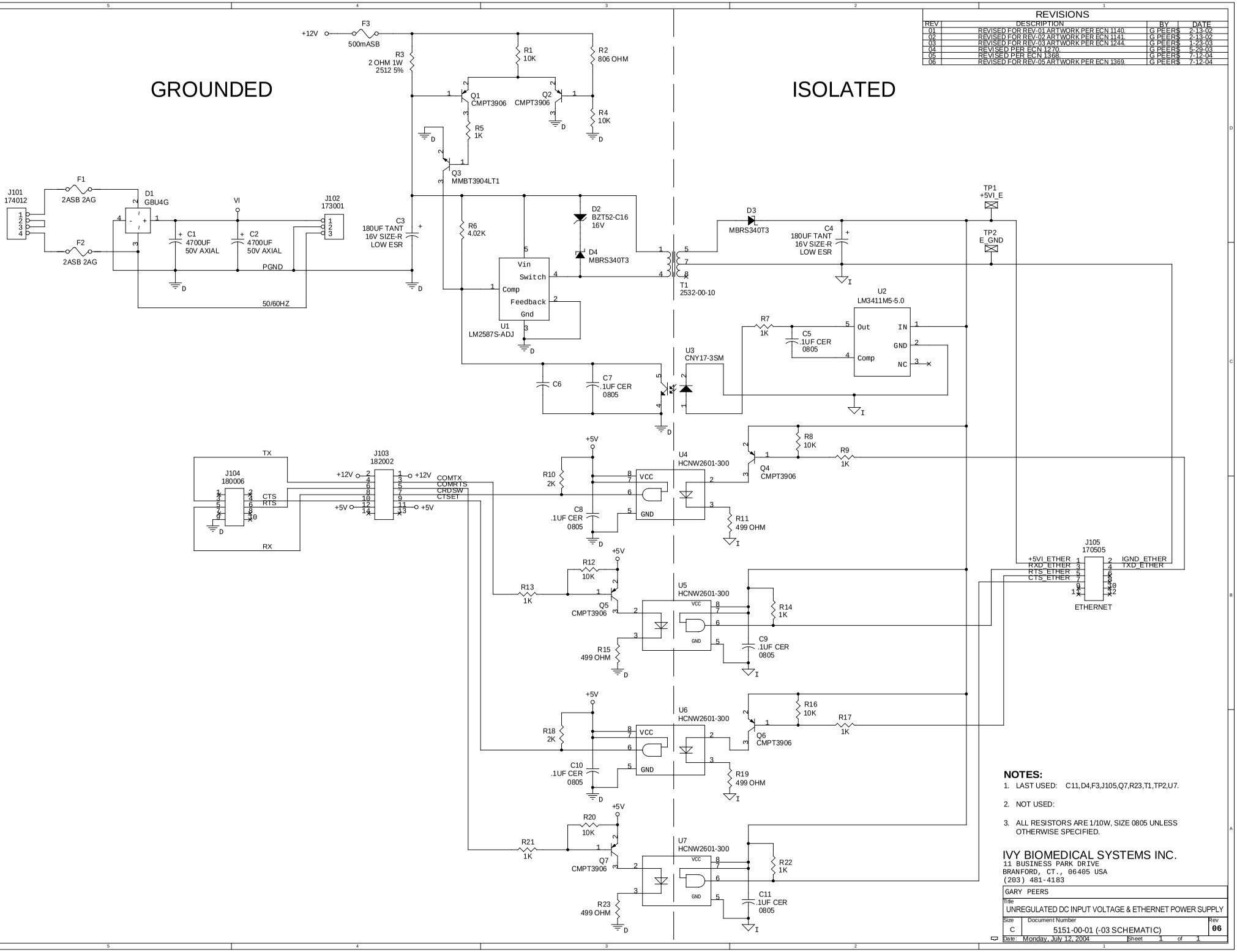
REVISIONS			
REV	DESCRIPTION	BY	DATE
01	REVISED FOR REV-01 ARTWORK PER ECN 1244.	GP	1-23-03
02	REVISED FOR REV-02 ARTWORK PER ECN 1260.	GP	3-11-03
03	REVISED PER ECN 1282.	GP	6-24-03
04	REVISED PER ECN 1307.	GP	11-7-03



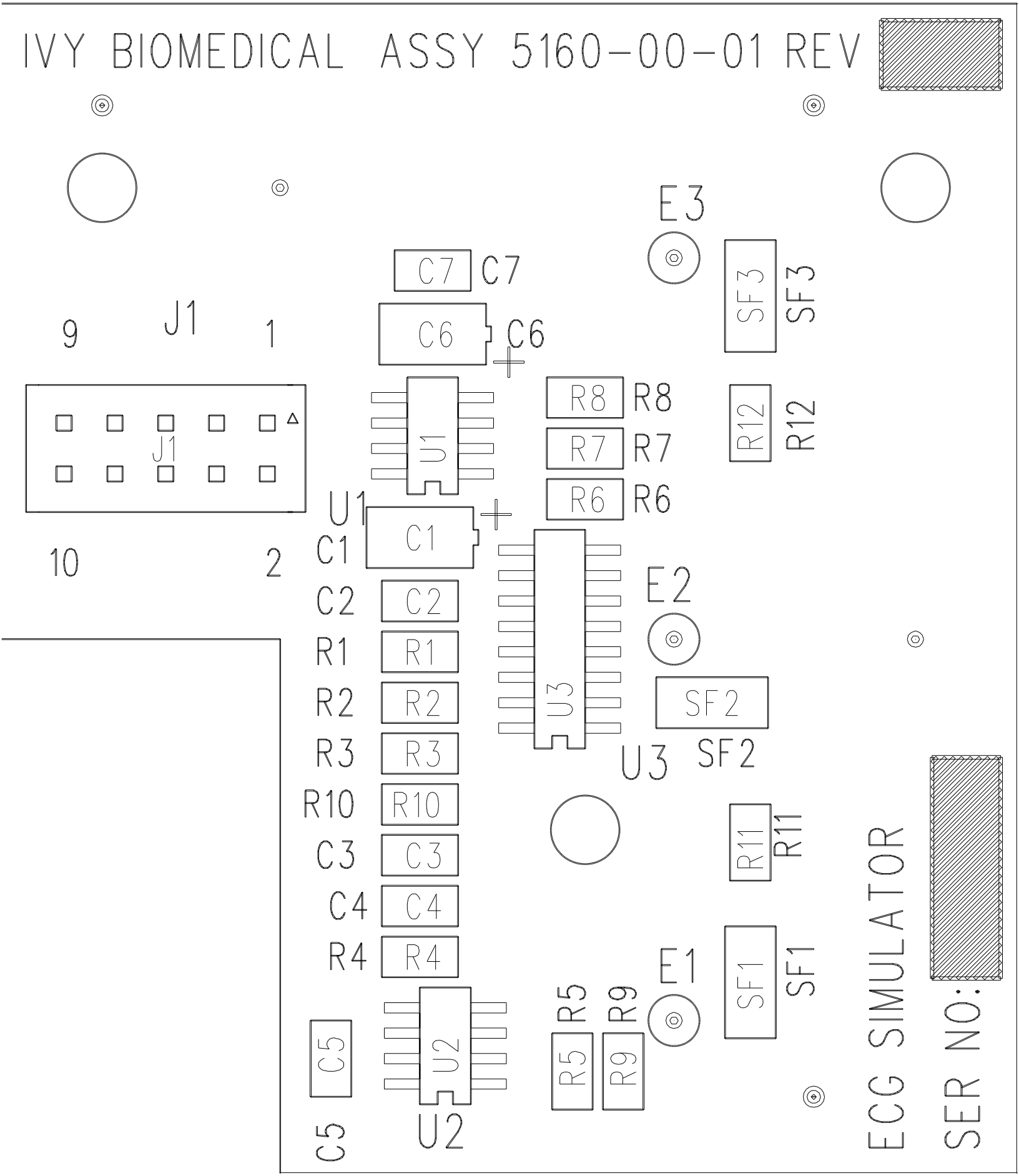
DWN: GP 1/23/03	CHK: RAM 1/23/03	APR: DL 1/23/03	
Title: ECG ISOLATED INPUT BOARD			
Size: A	Document Number: 5150-00-01 (-03 SCHEMATIC)		Rev: 04
Date: Friday, November 07, 2003	Sheet 1 of 1		



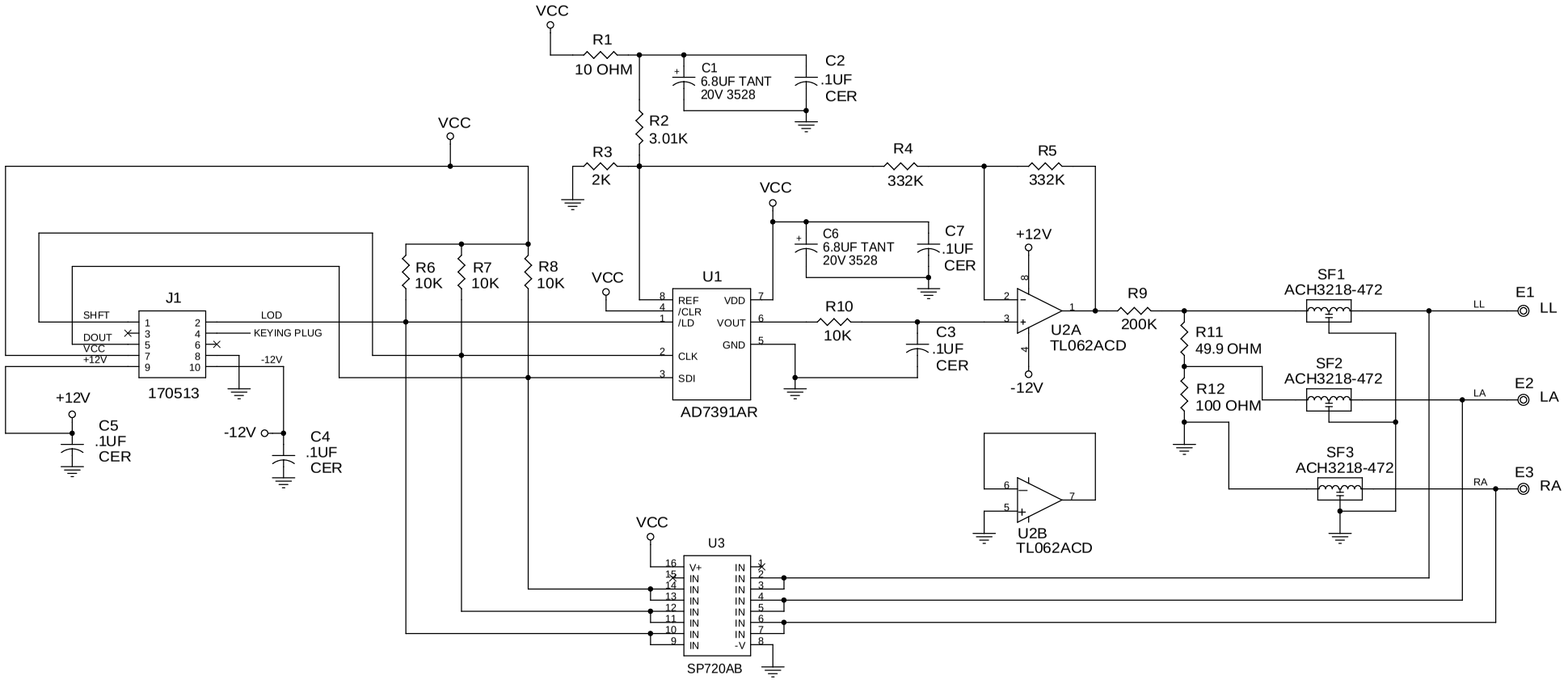
1 SILKSCREEN


REVISIONS
REV | DESCRIPTION | BY | DATE
01 | REVISED FOR REV-01 ARTWORK PER ECN 1140. | G PEERS | 2-13-02
02 | REVISED FOR REV-02 ARTWORK PER ECN 1141. | G PEERS | 2-13-02
03 | REVISED FOR REV-03 ARTWORK PER ECN 1244. | G PEERS | 1-23-03
04 | REVISED PER ECN 1270. | G PEERS | 5-29-03
05 | REVISED PER ECN 1368. | G PEERS | 7-12-04
06 | REVISED FOR REV-05 ARTWORK PER ECN 1369. | G PEERS | 7-12-04
GROUNDED
ISOLATED
+12V
F3
500mASB
R3
2 OHM 1W
2512 5%
R1
10K
R2
806 OHM
Q1
CMPT3906
Q2
CMPT3906
R4
10K
R5
1K
Q3
MMBT3904LT1
J101
174012
F1
2ASB 2AG
F2
2ASB 2AG
D1
GBU4G
VI
C1
4700UF
50V AXIAL
C2
4700UF
50V AXIAL
PGND
50/60HZ
J102
173001
C3
180UF TANT
16V SIZE-R
LOW ESR
R6
4.02K
D2
BZT52-C16
16V
D4
MBRS340T3
Vin
Switch
Comp
Feedback
Gnd
U1
LM2587S-ADJ
T1
2532-00-10
D3
MBRS340T3
C4
180UF TANT
16V SIZE-R
LOW ESR
TP1
+5VI_E
TP2
E_GND
U2
LM3411M5-5.0
Out
IN
GND
Comp
NC
R7
1K
C5
.1UF CER
0805
U3
CNY17-3SM
C6
C7
.1UF CER
0805
TX
RX
J104
180006
CTS
RTS
J103
182002
COMTX
CRDSW
CTSET
+5V
R8
10K
R9
1K
Q4
CMPT3906
U4
HCNW2601-300
VCC
GND
R10
2K
C8
.1UF CER
0805
R11
499 OHM
R12
10K
R13
1K
Q5
CMPT3906
U5
HCNW2601-300
R14
1K
R15
499 OHM
C9
.1UF CER
0805
R16
10K
R17
1K
Q6
CMPT3906
U6
HCNW2601-300
R18
2K
C10
.1UF CER
0805
R19
499 OHM
R20
10K
R21
1K
Q7
CMPT3906
U7
HCNW2601-300
R22
1K
R23
499 OHM
C11
.1UF CER
0805
J105
170505
+5VI_ETHER
RXD_ETHER
RTS_ETHER
CTS_ETHER
IGND_ETHER
TXD_ETHER
ETHERNET
NOTES:
1. LAST USED: C11,D4,F3,J105,Q7,R23,T1,TP2,U7.
2. NOT USED:
3. ALL RESISTORS ARE 1/10W, SIZE 0805 UNLESS OTHERWISE SPECIFIED.
IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT., 06405 USA
(203) 481-4183
GARY PEERS
Title
UNREGULATED DC INPUT VOLTAGE & ETHERNET POWER SUPPLY
Size
C
Document Number
5151-00-01 (-03 SCHEMATIC)
Rev
06
Date: Monday, July 12, 2004
Sheet 1 of 1

SILKSCREEN COMP SIDE



REVISIONS			
REV	DESCRIPTION	BY	DATE
01	REVISED PER ECN 1306.	GP	11-7-03
02	REVISED PER ECN 1330.	GP	3-8-04



NOTES:

1. LAST USED: C7, E3, J1, R12, SF3, U3.
2. NOT USED:
3. ALL RESISTORS ARE 1/10W, SIZE 0805 UNLESS OTHERWISE SPECIFIED.

IVY BIOMEDICAL SYSTEMS INC.
11 BUSINESS PARK DRIVE
BRANFORD, CT., 06405 USA
(203) 481-4183

DWN: GREG COX 7/3/03	CHK: GP 7/3/03	APR: RAM 7/3/03

Title: ECG SIMULATOR

Size	Document Number	Rev
B	5160-00-01 (-03 SCHEMATIC)	02

Date: Monday, March 08, 2004 Sheet 1 of 1

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ASSEMBLIES DRAWINGS AND SPARE PARTS

1. ASSEMBLIES

a. 2700-00-01 Main Assembly, 3000 series
b. 2699-00-01 Front Assembly, 3000 series
c. 2698-00-01 Bottom Cover Assembly, 3000 series
d. 2697-00-01 Rear Panel Assembly, 3000 series
e. 2701-00-01 Final Assembly, 3000 series

2. IDENTITY KITS

a. 2738-00-15 Kit, Model 3000
b. 2738-01-15 Kit, Model 3050
c. 2738-02-15 Kit, Model 3100
d. 2738-03-15 Kit, Model 3200
e. 2738-04-15 Kit, Model 3150
f. 2738-05-15 Kit, Toshiba Model 3000
g. 2739-00-15 Kit, Recorder, Model 3000
h. 2739-01-15 Kit, Recorder, Model 3100

3. OPTION KITS

a. 2752-00-15 Kit, Without recorder
b. 2772-00-15 Kit, ECG Simulator
c. 2772-01-15 Kit, No ECG Simulator

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ASSEMBLIES

2700-00-01 MAIN ASSEMBLY, 3000 SERIES

SEQ#	PART#	DESCRIPTION
1	2697-00-01	REAR PANEL ASSEMBLY, 3000 SERIES
2	2699-00-01	FRONT ASSEMBLY, 3000 SERIES
3	5148-00-01	ADULT 3 LEAD ECG & PEAK DETECTOR BOARD ASSEMBLY
4	721006	SCREW, PAN HEAD, PHIL, STEEL, No.4-40 x 3/8" LONG
5	721007	SCREW, PAN HD, PHIL, STEEL, No.4-40 x 1/4 " LONG, NICKEL PL
6	730013	JAM NUT, STEEL, 1/2-28
7	740002	FLATWASHER, STEEL, No.4
8	740003	LOCKWASHER, INT. TOOTH, STEEL, No.4
9	740025	LOCKWASHER, STEEL, 1/2" DIA, FOR USE WITH JAM NUT No.730013
10	750052	STANDOFF, FEMALE, NYLON, No.4-40 x 1/4" HEX x 1" LONG

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

ASSEMBLE THE JAM NUT AND LOCKWASHER TO THE REAR PANEL OUTPUT CONNECTOR.

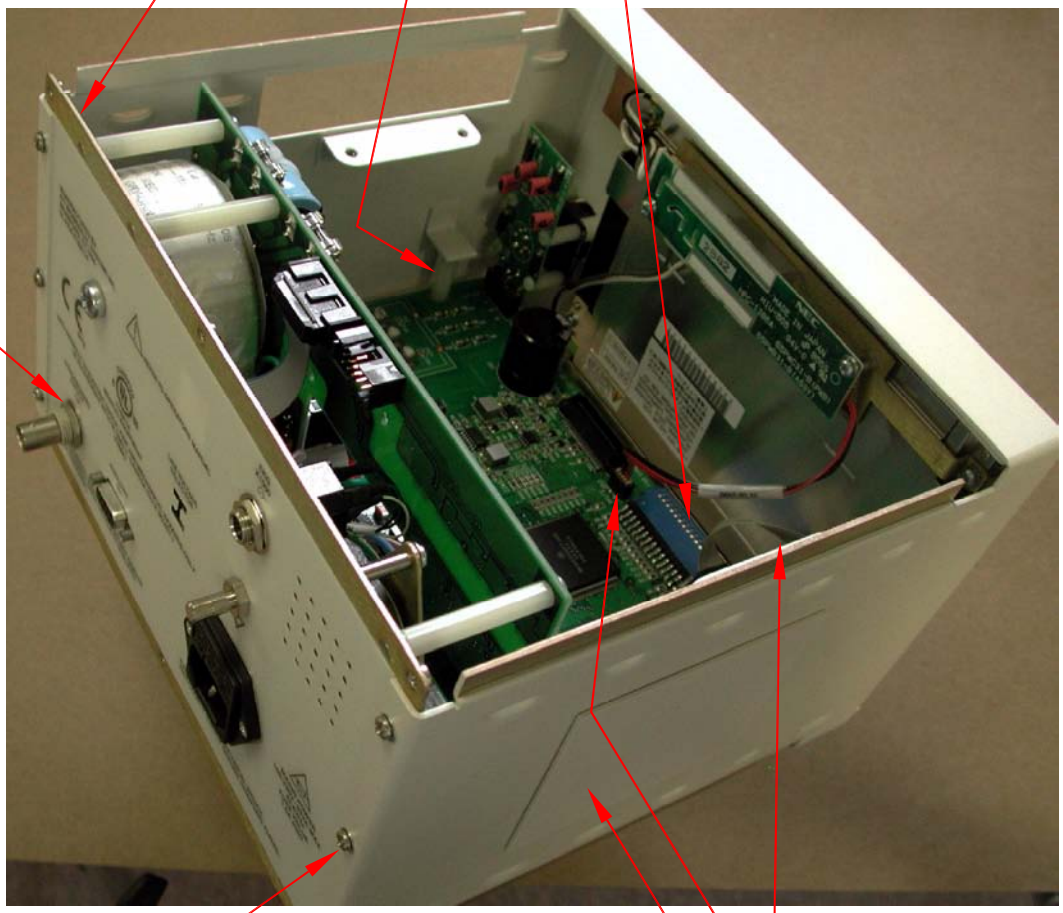
6 9

1

ASSEMBLE THE STANDOFF TO THE STUD ON THE SHEET METAL "L" BRACKET.

10

CONNECT THE FRONT PANEL RIBBON TO J102 ON THE MAIN BOARD ASSEMBLY PRIOR TO FITTING THE BOARD INTO THE CHASSIS. THE 3000 PANEL RIBBON IS A 14 PIN CONNECTOR. THE 3100 PANEL RIBBON IS AN 18 PIN CONNECTOR. J102 ON THE MAIN BOARD IS AN 18 PIN CONNECTOR. ASSEMBLE THE 14 PIN RIBBON CONNECTOR TO THE LEFT, VIEWED FROM FRONT. THIS WILL RESULT IN THE 4 PINS CLOSEST TO THE ECG CONNECTOR BEING OPEN ON THE 3000 MODEL. ALLOW THE SERVICE LOOP / EXCESS RIBBON TO LOOP UNDER THE BOARD, ON THE SOLDER SIDE OF BOARD.



5 8 6 PLCS

ASSEMBLE THE REAR PANEL ASSEMBLY USING THE HARDWARE AS SHOWN.

108

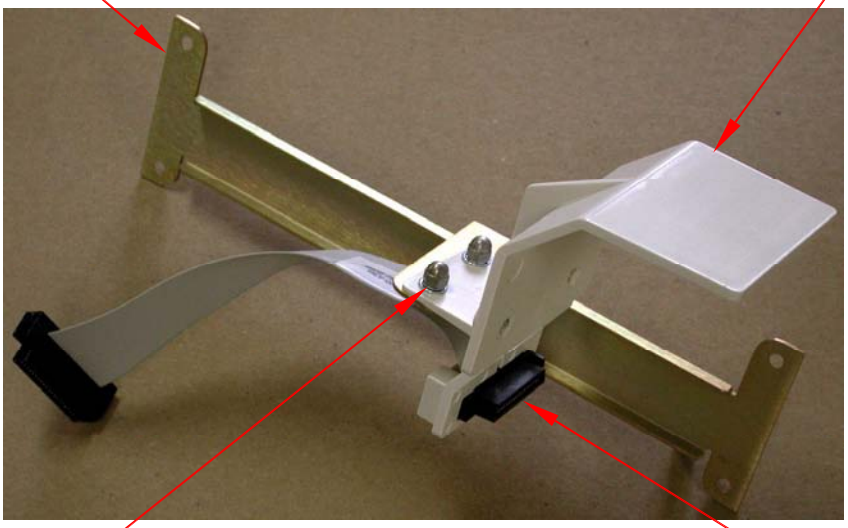
MONITORS WITHOUT THE RECORDER OPTION ARE TO HAVE A COVER PLATE INSTALLED. THIS COVER IS A SNAP-FIT FROM THE OUTSIDE.

CONNECT P103 FROM THE INVERTER TO J103 ON THE MAIN BOARD ASSEMBLY. (4 PIN CONNECTOR)

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 1 OF 14	DRAWING NUMBER BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

MODEL 3000 WITH RECORDER ONLY



107 106 105 2 PLCS

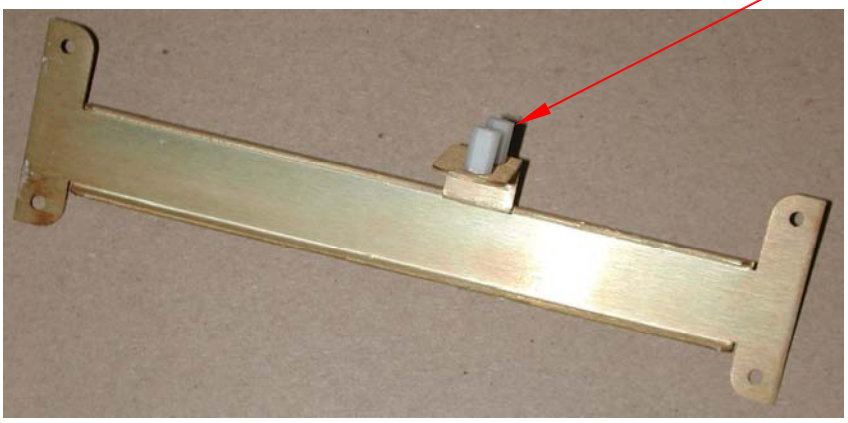
ASSEMBLE THE MOLDED BRACKET WITH HARDWARE SHOWN.

102

ASSEMBLE THE HARNESS INTO THE MOLDED MOUNT WITH THE WIDE SIDE OF THE D-CONN FACING DOWN.

MODELS WITHOUT RECORDER ONLY

(MODEL 3000 BRACKET SHOWN)



ASSEMBLE THE NYLON STANDOFFS (2 PLCS) OVER THE THREADED STUDS IN THE SHEET METAL BRACKET.

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET: 6 OF 14	DRAWING NUMBER: BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

AFTER THE BRACKET ASSEMBLY HAS BEEN INSTALLED AND THE GASKET HAS BEEN ADHERED TO THE RECORDER FLANGE THE RECORDER CAN BE INSTALLED. INSERT THE RECORDER THRU THE SIDE OPENING ORIENTED AS SHOWN. PUSH THE RECORDER IN WHILE LOCATING AND FULLY MATING THE CONNECTOR ON THE RECORDER TO THE CONNECTOR ON THE INTERFACE HARNESS IN THE MOLDED BRACKET. OPEN THE RECORDER DOOR AND ASSEMBLE THE 2 CAPTIVE SCREWS.

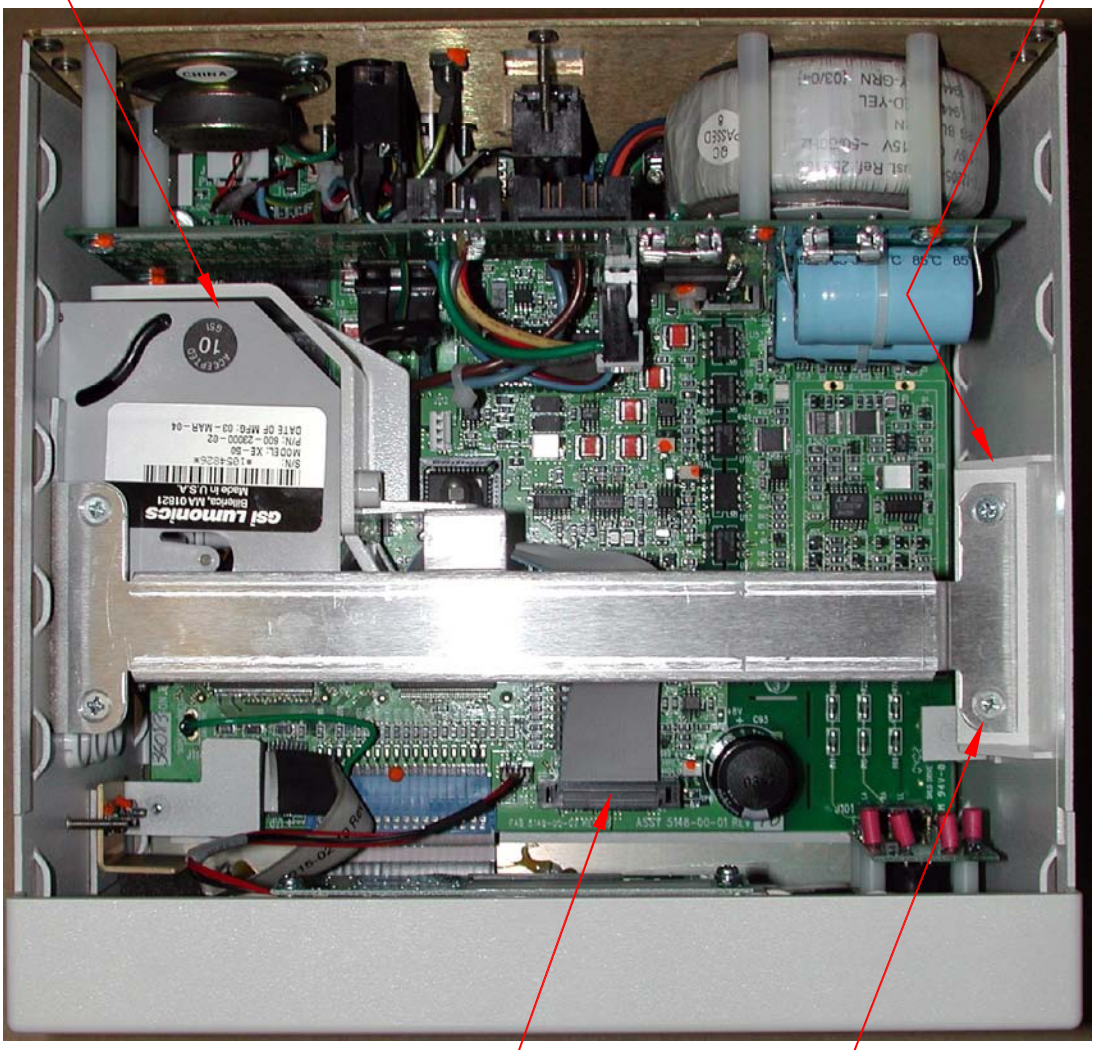
SIDE COVER ASSEMBLY FOR NON 3100/3150 MODELS.

FIT THE COVER PLATE, ITEM 125, INTO THE RECTANGULAR OPENING. ASSEMBLE IN PLACE WITH OR WITHOUT THE BRACKET FOR SUPPORTING THE RECORDER, ITEM 103, USING THE HARDWARE AS SHOWN.

MODEL 3000 WITH RECORDER ONLY

104

125



CONNECT THE RECORDER INTERFACE HARNESS INTO J105 ON THE MAIN BOARD ASSEMBLY. (40 PIN CONNECTOR)

90 4 PLCS

ASSEMBLE THE BRACKET ORIENTED AS SHOWN.

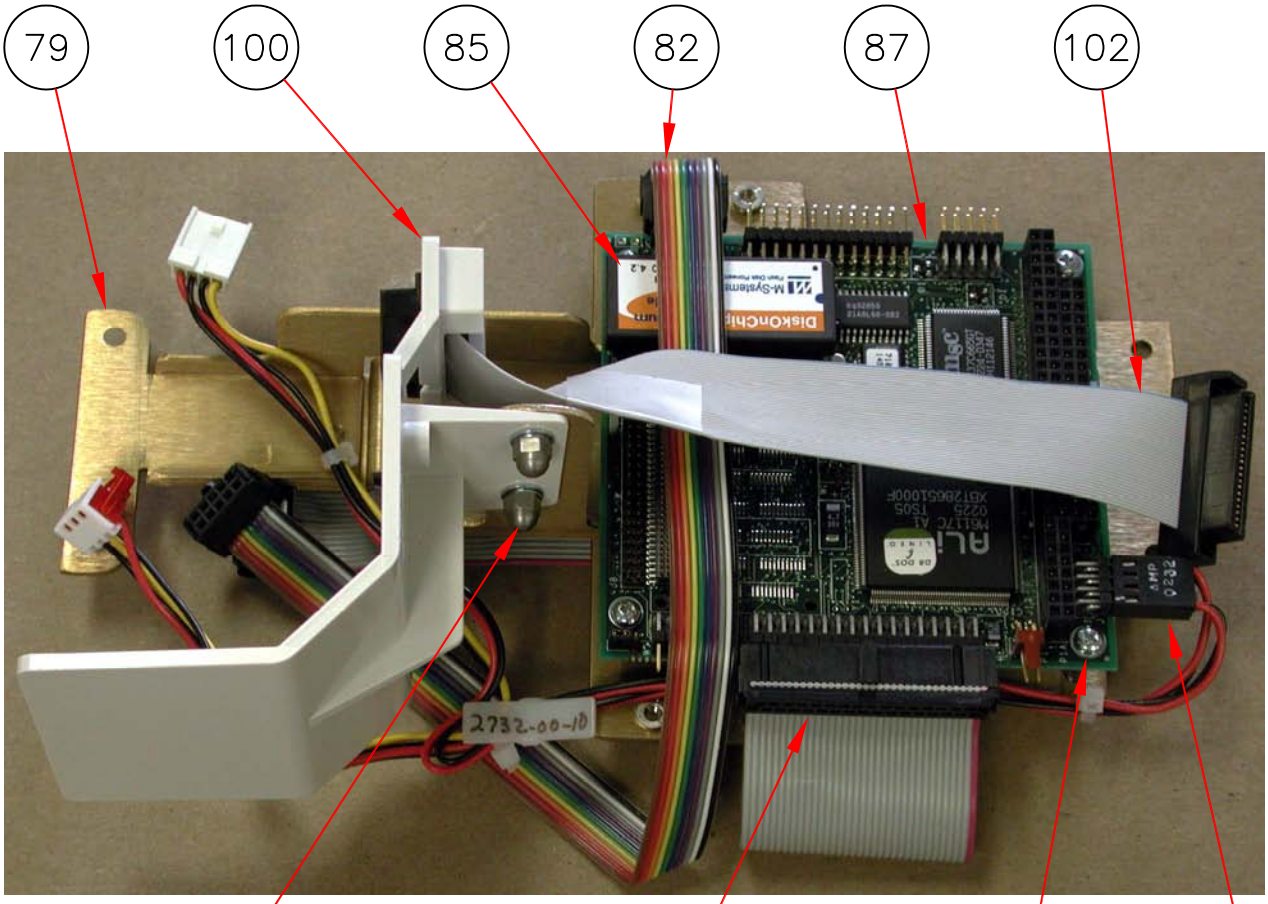
DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 7 OF 14	DRAWING NUMBER BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

DRIVE BRACKET ASSEMBLY, MODEL 3100 OR 3150 WITH AMPRO PC104 ONLY

CONNECT THE 10 PIN RIBBON HARNESS INTO THE SERIAL PORT 1 CONNECTOR, NOTE THE LOCATION OF PIN-1 CONDUCTOR (BROWN).

IF THE RECORDER OPTION IS REQUIRED ASSEMBLE THE HARNESS INTO THE MOLDED MOUNT WITH THE WIDE SIDE OF THE D-CONN FACING UP.



IF THE RECORDER OPTION IS REQUIRED ASSEMBLE THE MOLDED BRACKET WITH HARDWARE SHOWN.

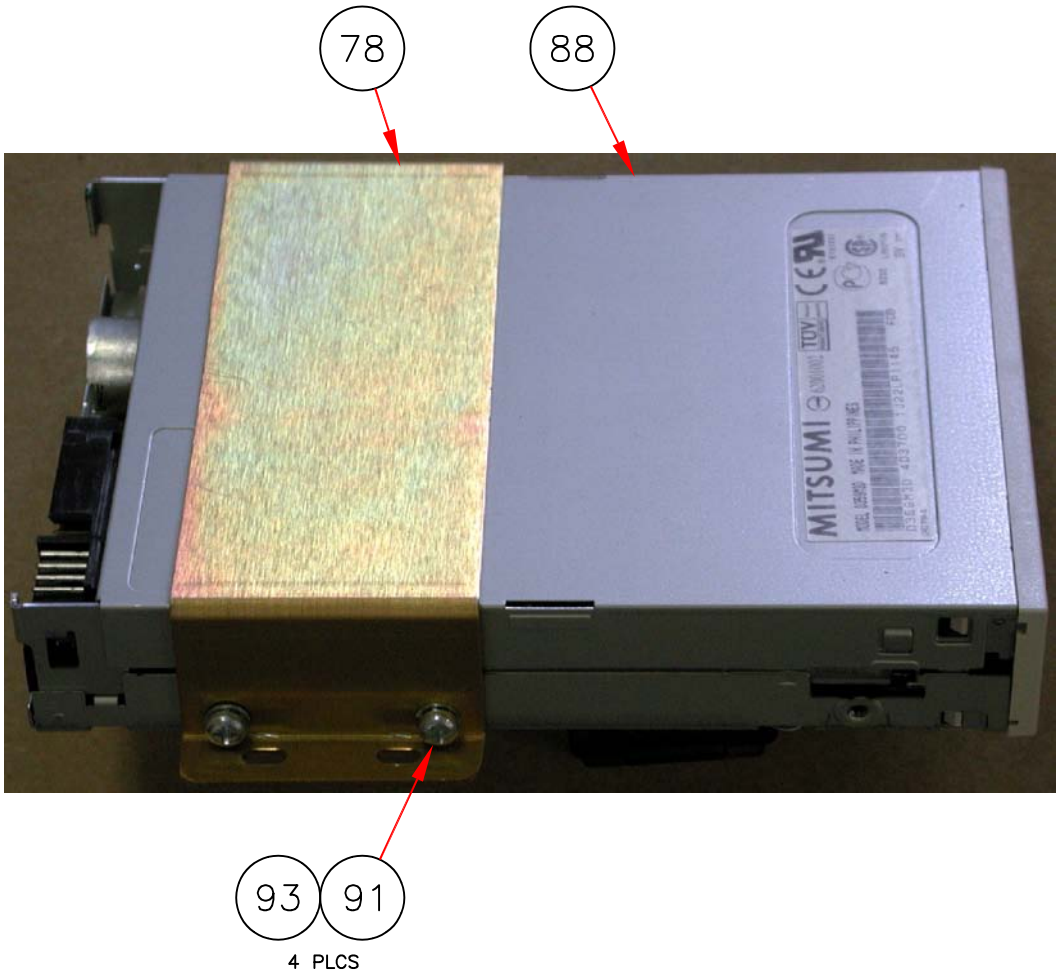
CONNECT THE 34 PIN RIBBON HARNESS INTO THE FLOPPY INTERFACE CONNECTOR, NOTE THE LOCATION OF COLORED PIN-1 CONDUCTOR.

CONNECT THE 8 PIN CONNECTOR INTO THE POWER CONNECTOR ON THE PC/104 MODULE.

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET 8 OF 14	DRAWING NUMBER: BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

DRIVE & CLAMP ASSEMBLY, MODELS 3100 & 3150 ONLY



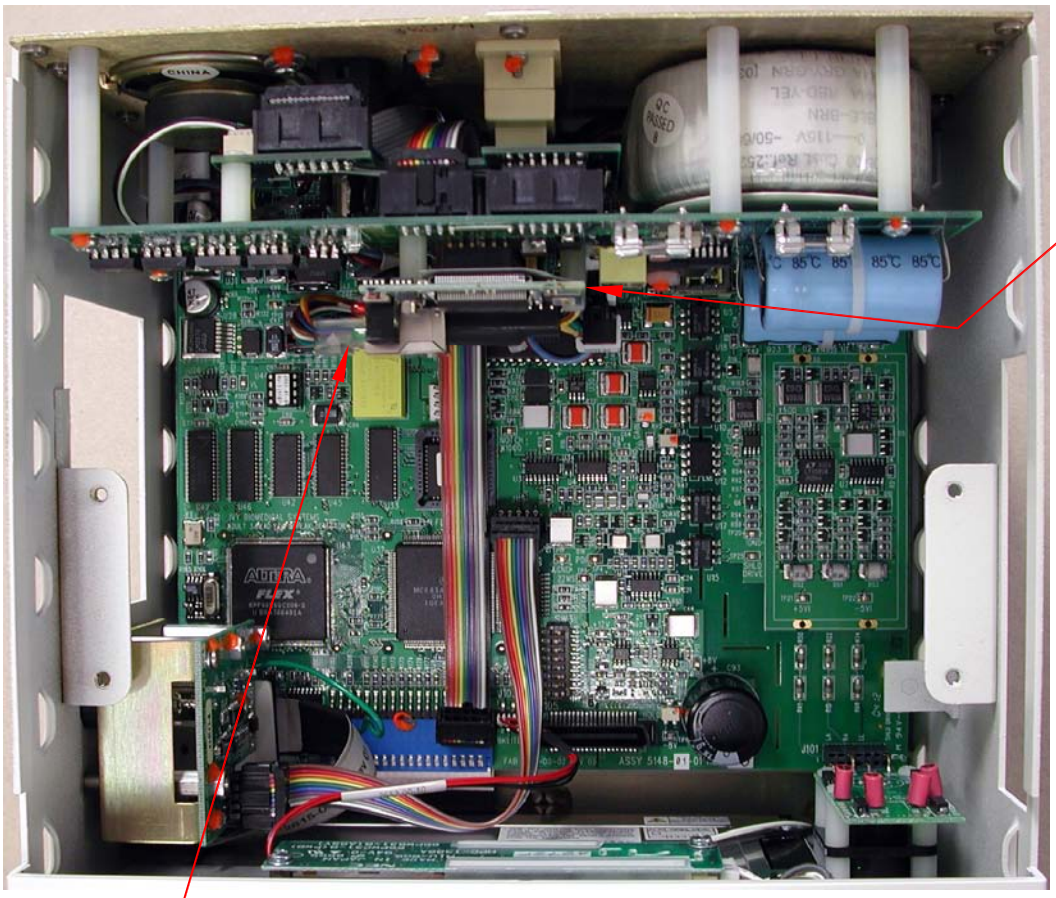
DRAWN G PEERS	DATE 2-3-03	BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET: 10 OF 14	DRAWING NUMBER: BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

ETHERNET MODELS ONLY

CONNECT THE ETHERNET MODULE, ITEM 128, INTO J105 ON THE POWER SUPPLY BOARD (12 PIN CONNECTOR)

128



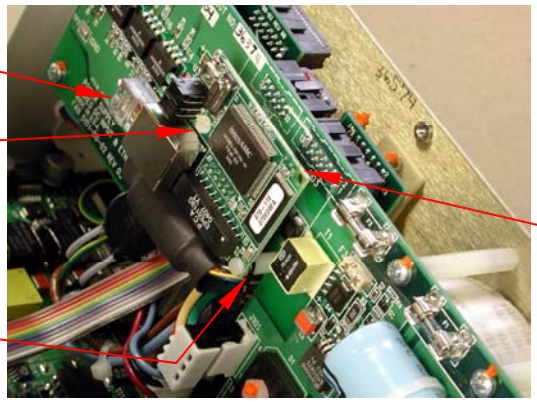
CONNECT THE ETHERNET HARNESS INTO THE ETHERNET MODULE, AS SHOWN

129

2 PLCS

137

USING A TY-RAP, SECURE THE HARNESS TO THE STANDOFF THAT MOUNTS THE ETHERNET MODULE.



128

REF.

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 11 OF 14	DRAWING NUMBER BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

FLOPPY DRIVE MODELS ONLY

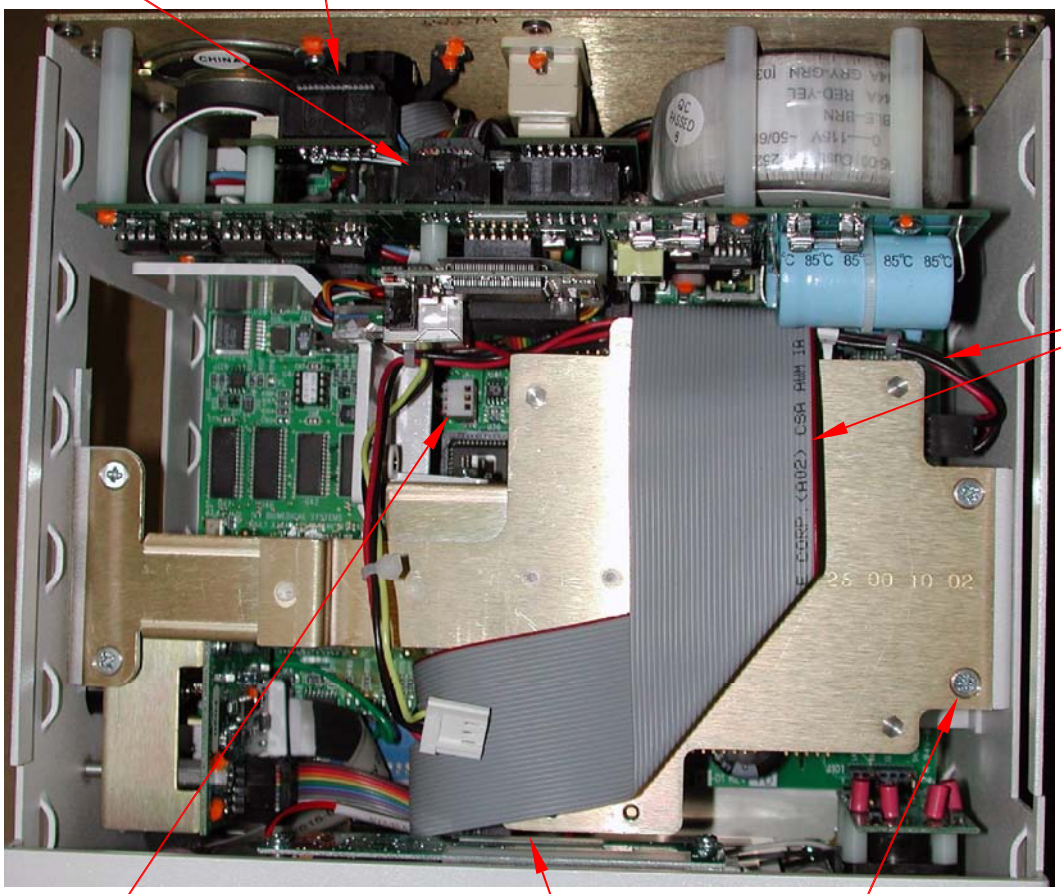
CONNECT THE 10 PIN RIBBON HARNESS FROM THE SERIAL PORT 1 CONNECT ON THE PC/104 MODULE TO J104 ON THE 5151 POWER SUPPLY BOARD ASSEMBLY, THE LOCATION OF PIN-1 CONDUCTOR (BROWN) IS CLOSEST TO THE SPEAKER.

IMPORTANT:

THE 34 CONDUCTOR RIBBON CABLE MUST PASS UNDER AND AROUND THE 4-WIRE HARNESS, ITEM 83, AS SHOWN. THIS HARNESS ROUTING KEEPS THE ISOLATED AREA OF THE MAIN P.C. BOARD CLEAR OF NON-ISOLATED WIRING.

82 REF

81 CONNECT THE 14 PIN RIBBON HARNESS FROM J114 ON THE 5148 MAIN BOARD TO J2 ON THE 5176 SWITCHER BOARD ASSEMBLY.



83 REF

CONNECT THE 4 PIN CONNECTOR TO J112 ON THE 5148 MAIN BOARD ASSEMBLY.

IF THE RECORDER OPTION IS REQUIRED. CONNECT THE RECORDER INTERFACE HARNESS INTO J105 ON THE MAIN BOARD ASSEMBLY. (40 PIN CONNECTOR)

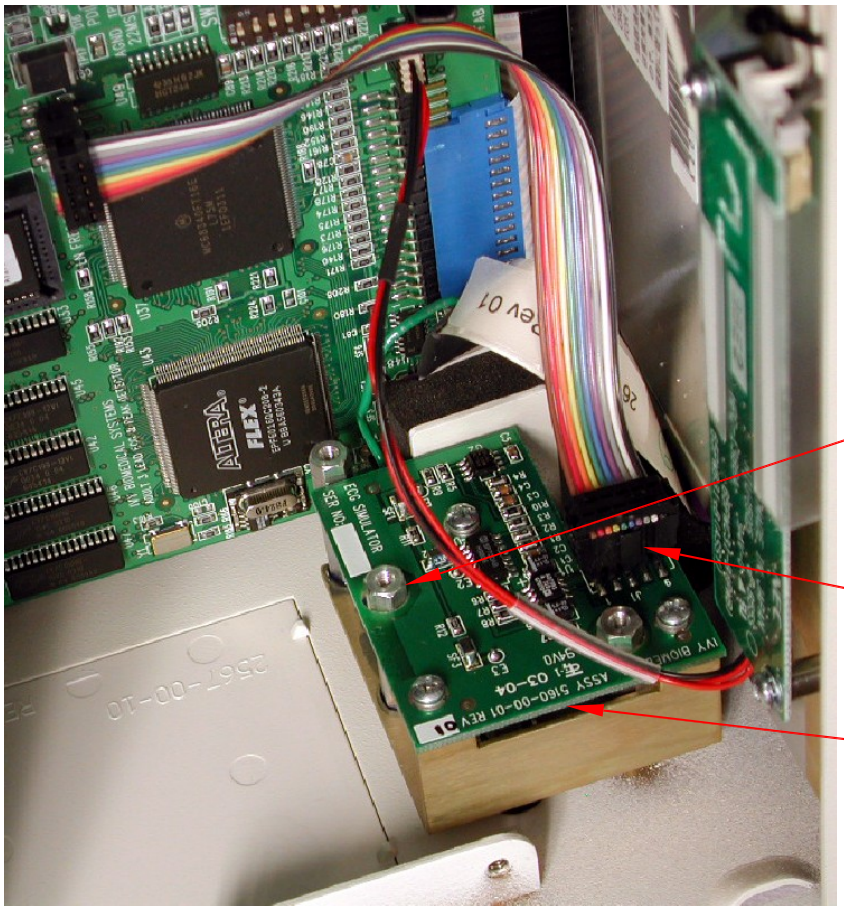
90 4 PLCS

ASSEMBLE THE DRIVE BRACKET ASSEMBLY ORIENTED AS SHOWN.

DRAWN G PEERS	DATE 2-3-03	BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET 12 OF 14	DRAWING NUMBER: BASE 2700 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2700-00-01 PARTS LIST.	GP	9-20-05

ECG SIMULATOR



ASSEMBLE THE ECG SIMULATOR BRACKET ASSEMBLY USING A DROP OF LOCTITE No. 425 ON THE THREADS OF EACH STANDOFF PRIOR TO INSTALLATION

118

3 PLCS

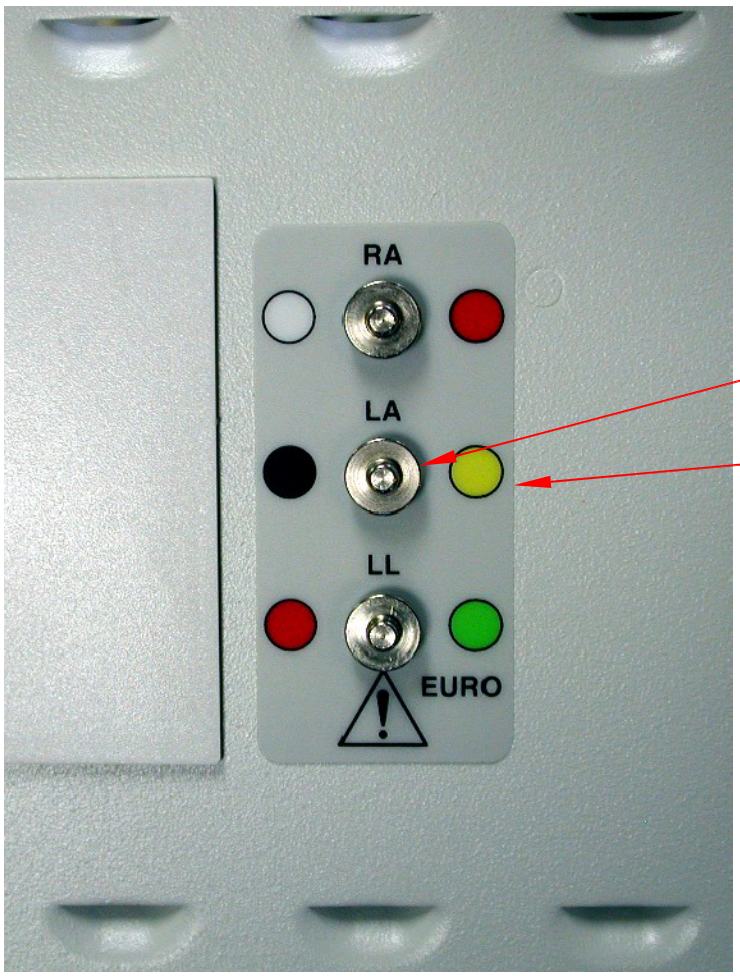
ASSEMBLE THE ECG SIMULATOR INTERFACE HARNESS ASSEMBLY WITH THE "KEYED" END INSTALLED INTO J1 OF THE 5160 BOARD AND THE OPPOSITE END INSTALLED INTO J115 OF THE 5148 BOARD ASSEMBLY

114

116

NON-ECG SIMULATOR

FOR MONITOR VARIATIONS THAT DO NOT HAVE AN "ECG SIMULATOR", INSTALL A WHITE HOLE PLUG, ITEM 119, INTO THE OUTSIDE CHASSIS, 3 PLCS. DO NOT APPLY THE LABEL, ITEM 115.



119

117

3 PLCS

115

DRAWN G PEERS	DATE 2-3-03	BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE MAIN ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 14 OF 14	DRAWING NUMBER BASE 2700 VAR. 00 OPER. 01

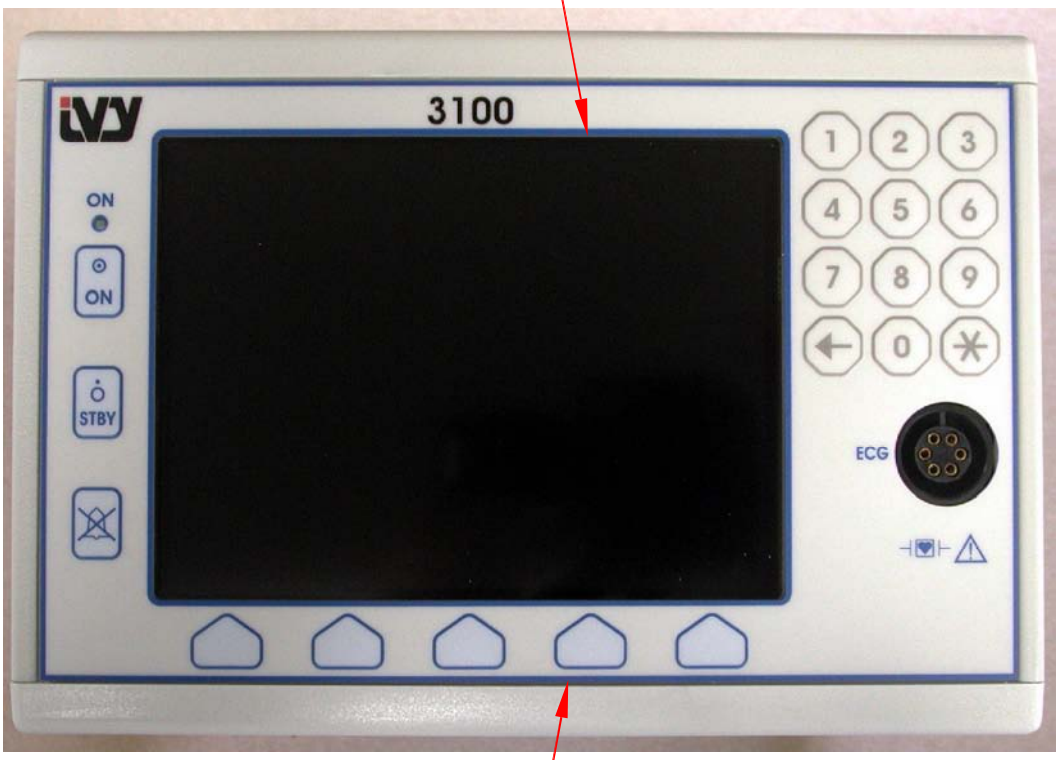
2699-00-01 FRONT ASSEMBLY, 3000 SERIES

SEQ#	PART#	DESCRIPTION
1	2747-00-10	GASKET, DUST
2	2767-00-10	DRESS CAP, 3000 SERIES
3	2615-02-10	HARNESS, DISPLAY INTERFACE
4	2651-00-13	WINDOW
5	2652-00-10	HARNESS, BACKLIGHT INVERTER
6	2724-00-10	BRACKET , INVERTER MOUNTING
7	2727-00-10	FOAM PAD, VIDEO HARNESS HOLD-DOWN
8	2741-00-10	BRACKET, DISPLAY HARNESS HOLD-DOWN
9	5150-00-01	ECG ISOLATED INPUT BOARD ASSEMBLY
10	570015	DISPLAY, COLOR FLAT PANEL, 6.5" (640 x 480)
11	570016	INVERTER, FOR DISPLAY
12	630021	TY-RAP, BLACK NYLON, 2.875" LG
13	721006	SCREW, PAN HD, PHIL, STEEL, No.4-40 x .375" LG
14	730000	NUT, HEX, STEEL, No.4-40
15	740002	FLATWASHER, STEEL, No.4
16	740003	LOCKWASHER, INT. To6TH, STEEL, No.4-40
17	2643-01-11	CHASSIS, PAINTED
18	2827-00-10	INSULATOR, DISPLAY

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2699-00-01 PARTS LIST.	GP	3-28-05

ASSEMBLE THE WINDOW WITH THE GROOVED EDGES FACING UP, TOWARD THE OUTSIDE OF THE MONITOR. THE WINDOW IS TO SIT ON THE SHEET METAL INNER FRAME.

4



80 95

PREFORM STEPS 1, 2 AND 3 OF PROCEDURE 9947-00-08. FEED THE RIBBON CABLE AND COPPER GROUND STRIP THRU THE SHEET METAL SLOTS. PREFORM STEP 4 OF PROCEDURE 9947-00-08. REMOVE THE LABEL'S PROTECTIVE BACKING. PREFORM STEPS 5 THRU 8 OF 9947-00-08.

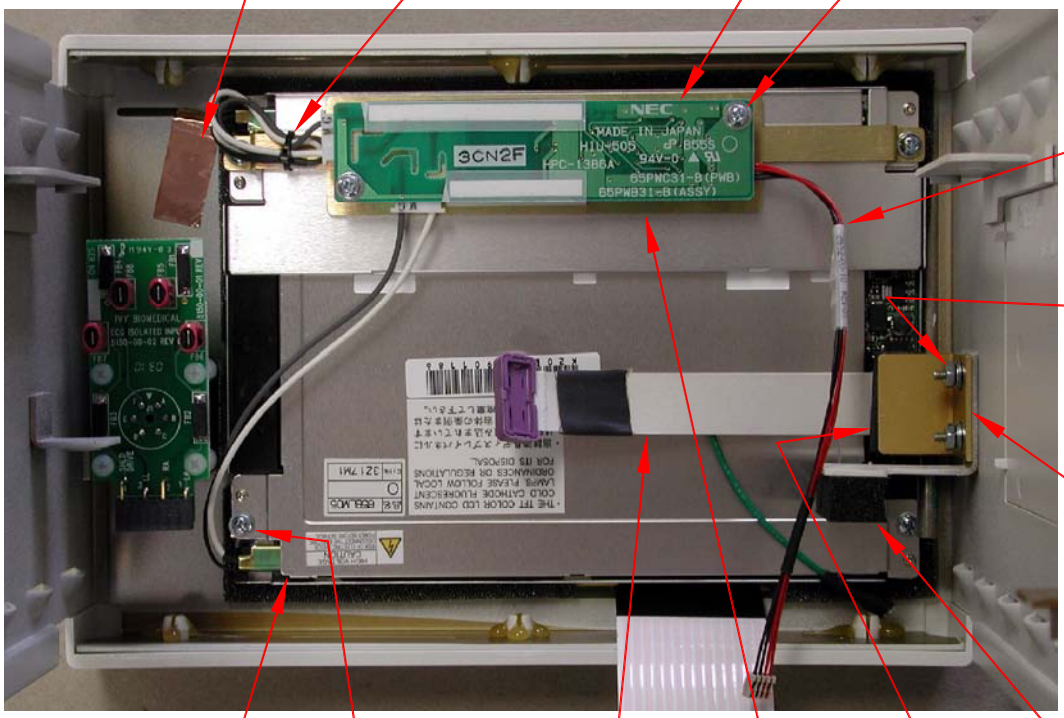
DRAWN G PEERS	DATE 1-31-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE FRONT ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 3 OF 4	DRAWING NUMBER BASE 2699 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
09	FOR REVISION HISTORY SEE 2699-00-01 PARTS LIST.	GP	3-28-05

FEED THE FRONT PANEL'S COPPER GROUND STRIP THRU THE SHEET METAL SLOT. PEEL OFF THE PROTECTIVE BACKING AND ADHERE THE COPPER STRIP TO THE INSIDE SURFACE OF THE SHEET METAL ENCLOSURE.

LOOP THE DISPLAY WIRES TOGETHER AND TY-RAP TO THE INVERTER BRACKET.

ASSEMBLE THE INVERTER AND THE INTERFACE HARNESSES.



12 11 13 19 (2 PLCS) 5 (2 PLCS) 15 18 19 8 10 (4 PLCS) 2 13 19 3 6 7 7

ASSEMBLE THE DISPLAY AND BRACKET FOR INVERTER MOUNTING. WHEN ORIENTING THE BRACKET FOR ASSEMBLY, POSITION AS SHOWN, THE BRACKET IS NOT SYMETRICAL. THE FACE OF THE DISPLAY AND INSIDE FACE OF THE WINDOW MUST BE CLEAN AND DUST FREE.

NOTES:

2 ASSEMBLE THE DISPLAY WITH HARDWARE SHOWN USING A TORQUE LIMITING SCREW DRIVER, CONTACT EAST PART No. 115-889 (MODEL TS100) OR EQUIVALENT. SET THE TORQUE SCREW DRIVER TO 40 OUNCE/INCHES. APPLY A DROP OF LOCTITE No. 425 ON THE SCREW THREADS AND ASSEMBLE EACH OF THE (4) SCREWS WITH A LOCKWASHER.

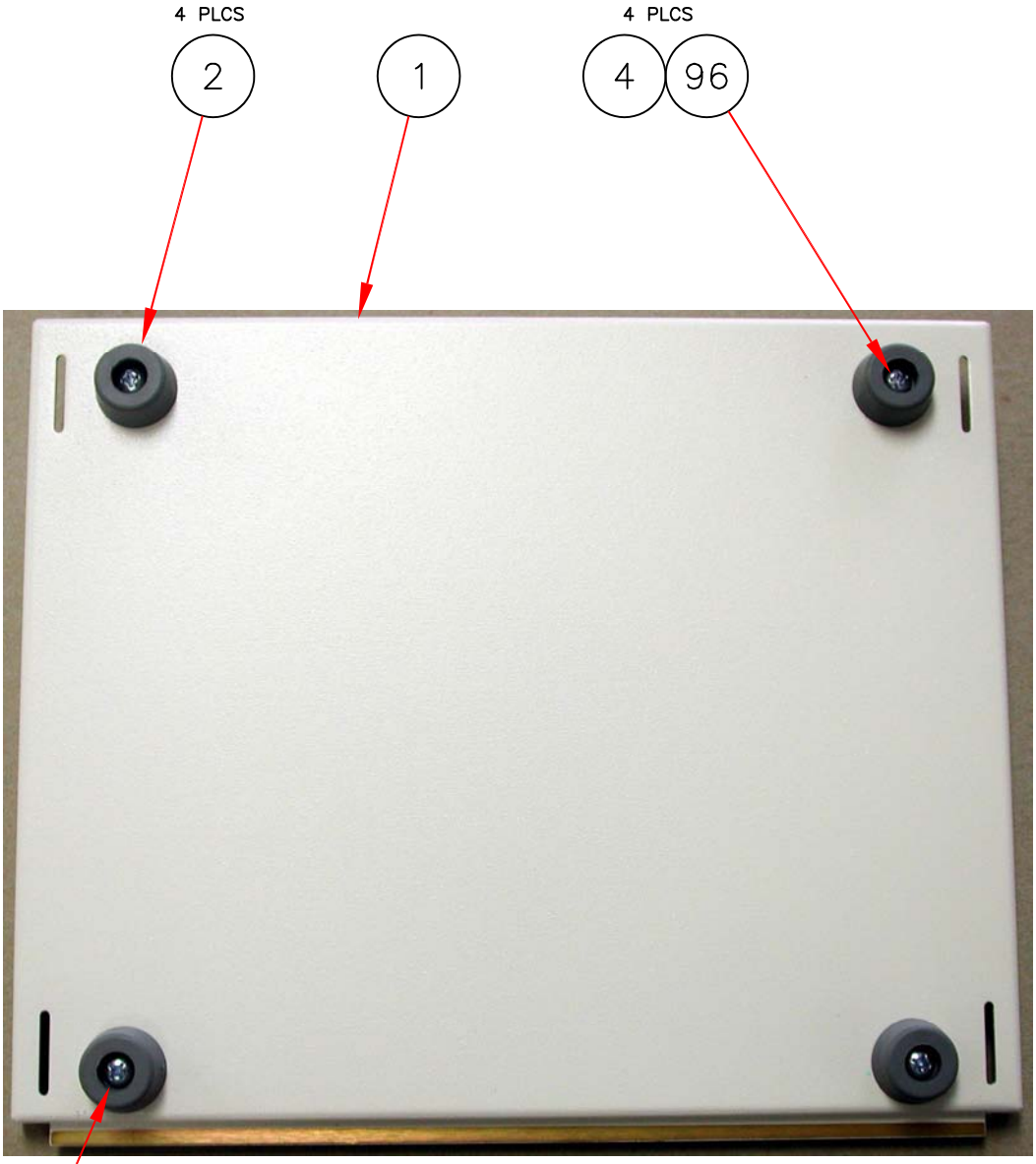
DRAWN G PEERS	DATE 1-31-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183
CHECKED RAM	DATE 2-3-03	
APPROVED DL	DATE 2-3-03	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: FRONT ASSEMBLY, 3000 SERIES
MATERIAL _____		SCALE: NONE; SIZE: A; DRAWING NUMBER: BASE 2699, VAR. 00, OPER. 01
FINISH _____		SHEET 4 OF 4

2698-00-01 BOTTOM COVER ASSEMBLY, 3000 SERIES

SEQ#	PART#	DESCRIPTION
1	2649-00-11	COVER, BOTTOM, PAINTED
2	680035	RUBBER BUMPER FOOT, GRAY, W/ INSERT, 3/4" DIA x 3/8" TALL
3	740007	LOCKWASHER, INT. TOOTH, STEEL, No.6

ASSEMBLE THE RUBBER BUMPER FEET TO THE BOTTOM COVER

REVISIONS			
REV	DESCRIPTION	BY	DATE
02	FOR REVISION HISTORY SEE 2698-00-01 PARTS LIST.	GP	4-7-04



AFTER ASSEMBLING THE FEET, APPLY A DROP OF ORANGE TORQUE SEAL (ORGANIC PRODUCTS No. F900) TO THE EXPOSED SCREW THREADS ON THE INSIDE OF THE COVER, 4 PLACES.

DRAWN	G PEERS	DATE	2-3-03
CHECKED	RAM	DATE	2-3-03
APPROVED	DL	DATE	2-3-03

IVY BIOMEDICAL SYSTEMS INC.
11 Business Park Drive
Branford, Connecticut 06405 (203) 481-4183

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCE:
.00X ± .005 .0X ± .015
ANGLES ± 1°

TITLE
BOTTOM COVER ASSEMBLY, 3000 SERIES

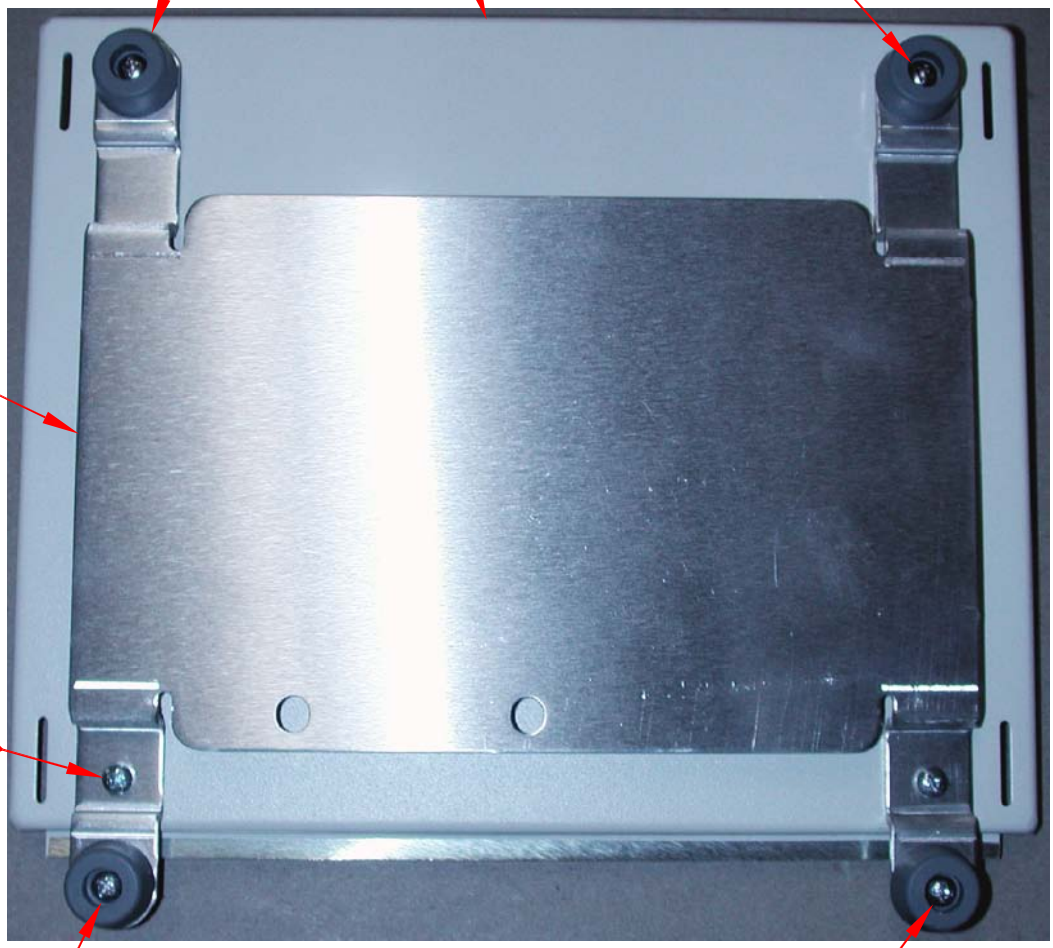
MATERIAL _____

FINISH _____

SCALE	SIZE	DRAWING NUMBER		
		BASE	VAR.	OPER.
NONE	A	2698	00	01
SHEET 1 OF 2				

ROLL STAND MOUNTING PLATE OPTION

REVISIONS			
REV	DESCRIPTION	BY	DATE
02	FOR REVISION HISTORY SEE 2698-00-01 PARTS LIST.	GP	4-7-04



AFTER ASSEMBLING THE FEET, APPLY A DROP OF ORANGE TORQUE SEAL (ORGANIC PRODUCTS No. F900) TO THE EXPOSED SCREW THREADS ON THE OPPOSITE SIDE OF THE PLATE, 4 PLACES.

DRAWN G PEERS	DATE 2-3-03	IVS BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183
CHECKED RAM	DATE 2-3-03	
APPROVED DL	DATE 2-3-03	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°

TITLE: BOTTOM COVER ASSEMBLY, 3000 SERIES

MATERIAL _____

FINISH _____

SCALE	SIZE	DRAWING NUMBER		
		BASE	VAR.	OPER.
NONE	A	2698	00	01
SHEET 2 OF 2				

2697-00-01 Rear Panel Assembly, 3000 series

SEQ#	PART#	DESCRIPTION	
2	680041	KIT, LINE CORD RETAINING CLIP	
4	2522-01-10	HARNESS, INTERFACE FROM POWER SUPPLY TO MAIN BOARD	
5	2616-00-10	HARNESS, SPEAKER	
6	2625-01-10	HARNESS, ECG / LEAD OFF OUTPUT	
7	2644-00-10	REAR PANEL MOUNTING PLATE	
8	2722-00-10	LABEL, REAR PANEL	
9	2735-00-10	INSULATOR, TOROID TRANSFORMER	
11	150036	FERRITE, CYLINDERICAL, .562 O.D. x .250 I.D. x 1.125 LONG	
12	174008	CONNECTOR, 4 PIN, MTA-156, CLOSED END WITH LOCKING RAMP	
13	174009	STRAIN RELIEF COVER, CLOSED END FOR 4 PIN MTA-156	
15	270002	VARISTOR, EUROPEAN	
16	280007	POWER ENTRY MODULE, MEDICAL GRADE	
17	290017	FUSE, 1/2ASB, METRIC, 5 x 20mm, 250V	
18	491005	SLIDE SWITCH, 2 POSITION, 115V /230V SELECTOR	
19	510006	SOLDER LUG, No.6	
20	2753-00-10	MC PLUG, TYPE POAG-S 6/151 15mm SHAFT	
21	630000	TRANSFORMER, TOROID, 115V/230V 50/60HZ DUAL PRIMARY,	35VA
23	630002	TY-RAP	
24	630003	HEATSHRINK TUBING, BLACK, 3/16" DIAMETER	
25	630009	HEATSHRINK TUBING, BLACK, 1/4 II DIAMETER	
26	630014	TEFLON TUBING, CLEAR, No.16	
27	630017	HEATSHRINK TUBING, CLEAR, 1/81' DIAMETER	
28	630023	4 WAY ADHESIVE BACKED CABLE TIE MOUNT, 3/4" x 3/4"	
29	641005	TY-RAP, 8" LONG	
30	641005	WIRE, 18GA, STRANDED, GREEN/YELLOW, 300V 80°	
31	641006	WIRE, 18GA, STRANDED, BLUE, 300V 105°C	
32	641007	WIRE, 18GA, STRANDED, BROWN, 300V 105°C	
34	721005	SCREW, PAN HD, PHIL, STEEL, No.4-40 x 3/16" LONG	
35	722002	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 3/81' LONG	
36	725013	SCREW, PAN HD, PHIL, STEEL, M6-1.0 x 50mm LONG	
37	730000	NUT, HEX, STEEL, No.4-40	
38	730001	NUT, HEX, STEEL, No.6-32	
39	730006	NUT, HEX, Mu 0.5 d/M6, METRIC	
40	740003	LOCKWASHER, INT. TOOTH, STEEL, No.4	
41	740007	LOCKWASHER, INT. TOOTH, STEEL, No.6	
42	740017	LOCKWASHER, SERRATED, F /M6, METRIC	
43	750053	STANDOFF, FEMALE, NYLON, No.6-32 x 1/4" HEX x 1.62" LONG	
44	740005	FLATWASHER, No.6, .380" O.D. x .045" THICK	

REVISIONS			
REV	DESCRIPTION	BY	DATE
10	FOR REVISION HISTORY SEE 2697-00-01 PARTS LIST.	GP	6-24-05

ASSEMBLE THE TOROID TRANSFORMER USING THE CENTER BOLT, LOCKWASHER AND NUT. PLACE ONE RUBBER PAD, SUPPLIED WITH THE TRANSFORMER, AGAINST THE SHEET METAL PLATE. ORIENT THE TRANSFORMER AS SHOWN AGAINST THE PAD. PLACE A SECOND RUBBER PAD ON THE OPPOSITE SIDE OF THE TRANSFORMER SANDWICHING THE TRANSFORMER BETWEEN THE PADS. ASSEMBLE THE DIMPLED METAL DISK CLAMP, SUPPLIED WITH THE TRANSFORMER, WITH THE DIMPLED SIDE TOWARD THE RUBBER PAD. BOLT IN PLACE USING THE LOCKWASHER AND NUT. USING A TORQUE WRENCH, TIGHTEN THE SCREW AND NUT TO TO 12 in/lb. ADHERE THE INSULATOR TO THE METAL DISK CLAMP.

2 PLCS 130 94

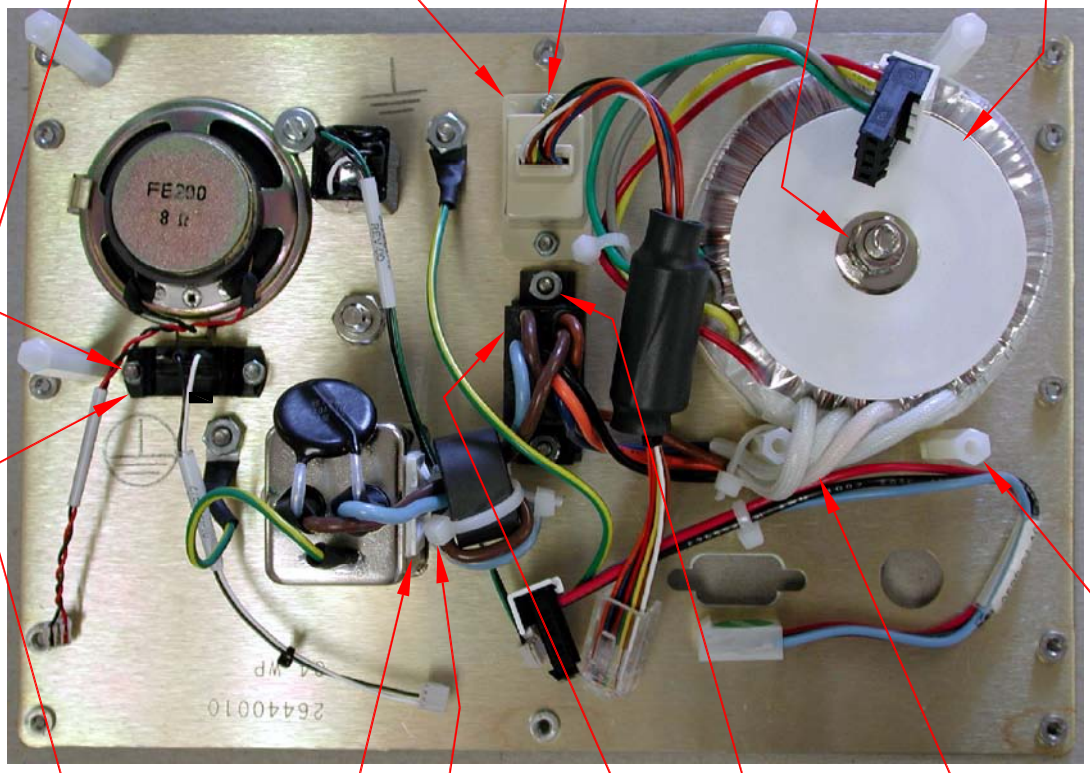
126

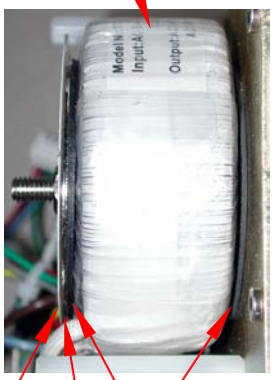
2 PLCS 130 94

39 42

9

21





RUBBER PAD
RUBBER PAD
METAL DISK
INSULATOR

6 PLCS 43

1 133

28

23

2 PLCS 18 37 40

LOCATE THESE 4 WIRES BETWEEN THE 2 STANDOFFS, AS SHOWN. TY-RAP THE WIRE BUNDLE TO THE STANDOFF.

SECURE THE FERRITE WITH THE WRAPPED WIRES TO THE POWER ENTRY MODULE.

ASSEMBLE THE SWITCH WITH THE VOLTAGE TEXT RIGHT SIDE UP ON THE LABEL SIDE OF PANEL.

CENTER ITEM 28 VERTICALLY ALONG THE BACK EDGE OF THE POWER ENTRY MODULE, AS SHOWN.

MODEL 3150 ONLY

NOTES:

1. INSTALL THE SWITCH HARNESS ASSEMBLY, ITEM 133, WITH THE WIRE TERMINATIONS FACING UP, CLOSEST TO THE SPEAKER.

DRAWN G PEERS	DATE 1-10-05	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183
CHECKED RAM	DATE 1-10-05	
APPROVED DL	DATE 1-10-05	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°

TITLE: REAR PANEL ASSEMBLY, MODEL 3150

MATERIAL _____

FINISH _____

SCALE	SIZE	DRAWING NUMBER		
		BASE	VAR.	OPER.
NONE	A	2697	00	01
SHEET 5 OF 10				

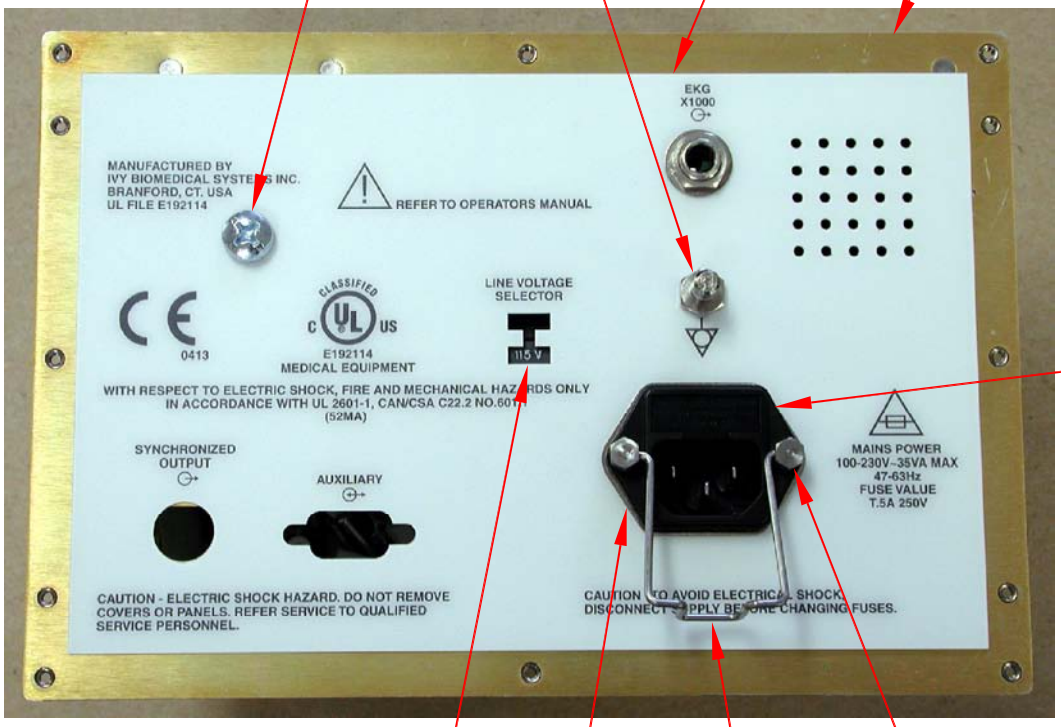
REVISIONS			
REV	DESCRIPTION	BY	DATE
10	FOR REVISION HISTORY SEE 2697-00-01 PARTS LIST.	GP	6-24-05

ITEM Nos. 39 & 42 ARE ON THE OPPOSITE SIDE OF THE REAR PANEL.

39 42

ADHERE THE REAR PANEL LABEL TO THE SHEET METAL PLATE USING THE LABEL ALIGNMENT FIXTURE.

36 20 8 7



INSTALL FUSES

17

2 PLCS

MODEL 3000 SHOWN

USE A SMALL FLAT HEAD SCREW DRIVER TO SET THE LINE VOLTAGE AS PER THE CUSTOMER ORDER.

16 2

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: REAR PANEL ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET 7 OF 10	DRAWING NUMBER: BASE 2697 VAR. 00 OPER. 01

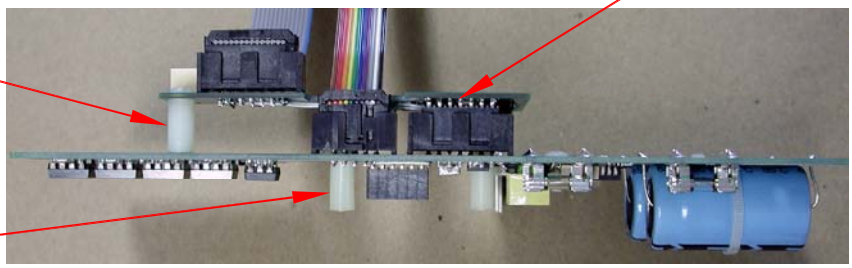
REVISIONS			
REV	DESCRIPTION	BY	DATE
10	FOR REVISION HISTORY SEE 2697-00-01 PARTS LIST.	GP	6-24-05

ASSEMBLE THE 3 SETS OF SCREWS AND STANDOFFS TO THE SWITCHER BOARD, ITEM 134, PRIOR TO ASSEMBLING TO THE POWER SUPPLY BOARD, ITEM 86.

131

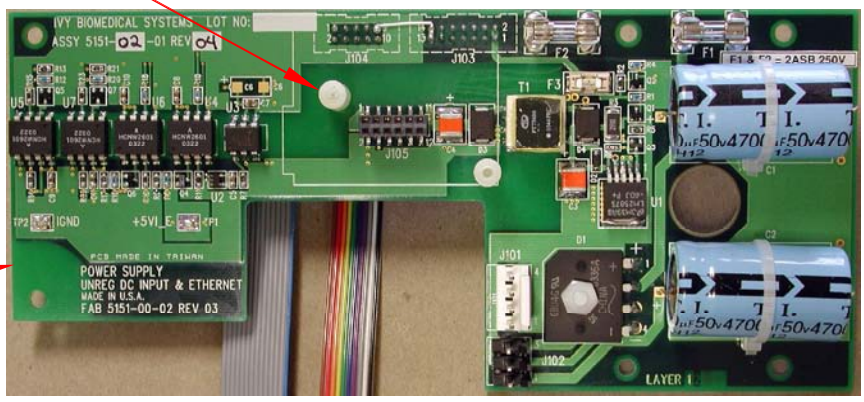
3 PLCS

CONNECT J3 ON THE SWITCHER BOARD INTO J103 ON THE POWER SUPPLY BOARD. (14 PIN CONNECTOR)



2 PLCS

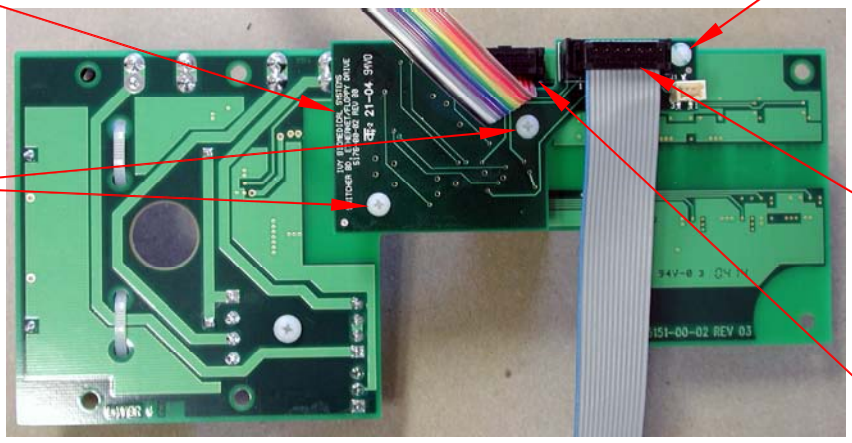
131



86

129

134



CONNECT ONE END OF THE HARNESS INTO J2 ON THE SWITCHER BOARD. (14 PIN CONNECTOR)

81

2 PLCS

135

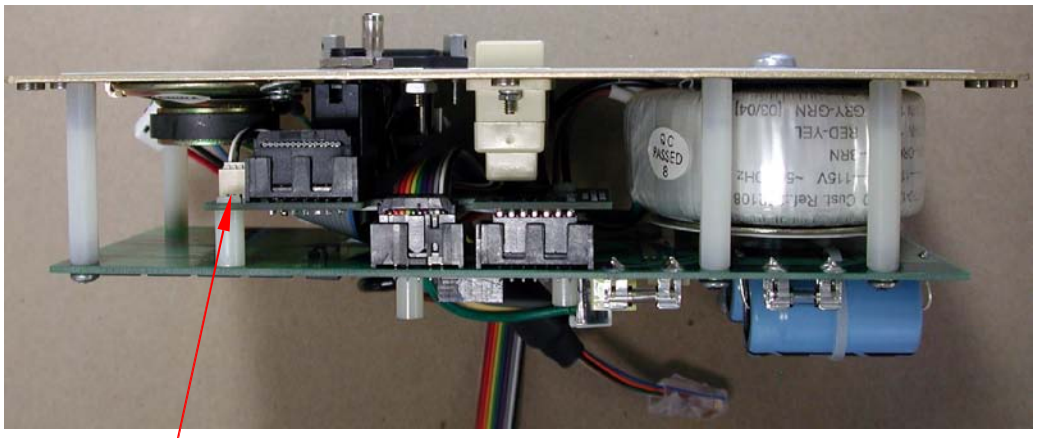
CONNECT THE UNKEYED END OF HARNESS INTO J104 ON THE POWER SUPPLY BOARD. (10 PIN CONNECTOR)

82

MODEL 3150 ONLY

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-3-03		
APPROVED DL	DATE 2-3-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE: REAR PANEL ASSEMBLY, MODEL 3150	
MATERIAL _____		SCALE: NONE	SIZE: A
FINISH _____		SHEET 8 OF 10	DRAWING NUMBER: BASE 2697 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
10	FOR REVISION HISTORY SEE 2697-00-01 PARTS LIST.	GP	6-24-05

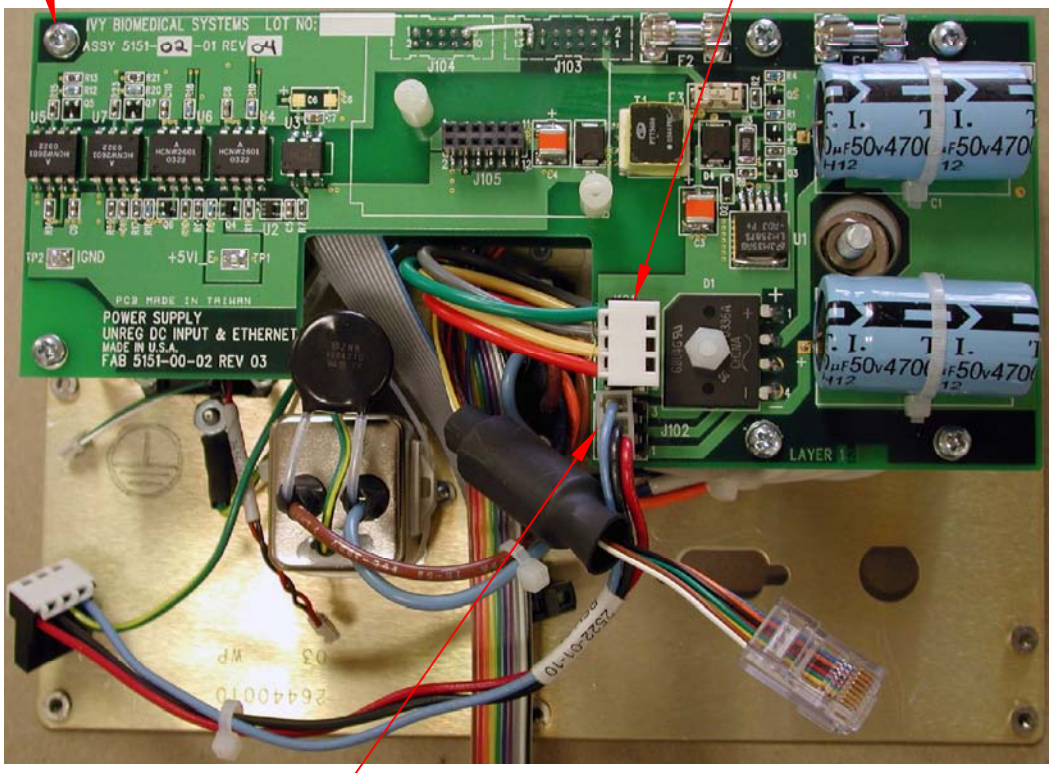


ASSEMBLE THE POWER SUPPLY BOARD ASSEMBLY AS SHOWN.

6 PLCS 35 41

MODEL 3150 ONLY
CONNECT THE SWITCH HARNESS INTO J1 ON THE SWITCHER BOARD (3 PIN CONNECTOR)

CONNECT P101 FROM THE TRANSFORMER TO J101 ON THE POWER SUPPLY BOARD. (4 PIN CONNECTOR)



CONNECT P102 FROM THE INTERFACE HARNESS TO J102 ON THE POWER SUPPLY BOARD. (3 PIN CONNECTOR)

DRAWN G PEERS	DATE 2-3-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183
CHECKED RAM	DATE 2-3-03	
APPROVED DL	DATE 2-3-03	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°

TITLE: REAR PANEL ASSEMBLY, 3000 SERIES

MATERIAL _____

FINISH _____

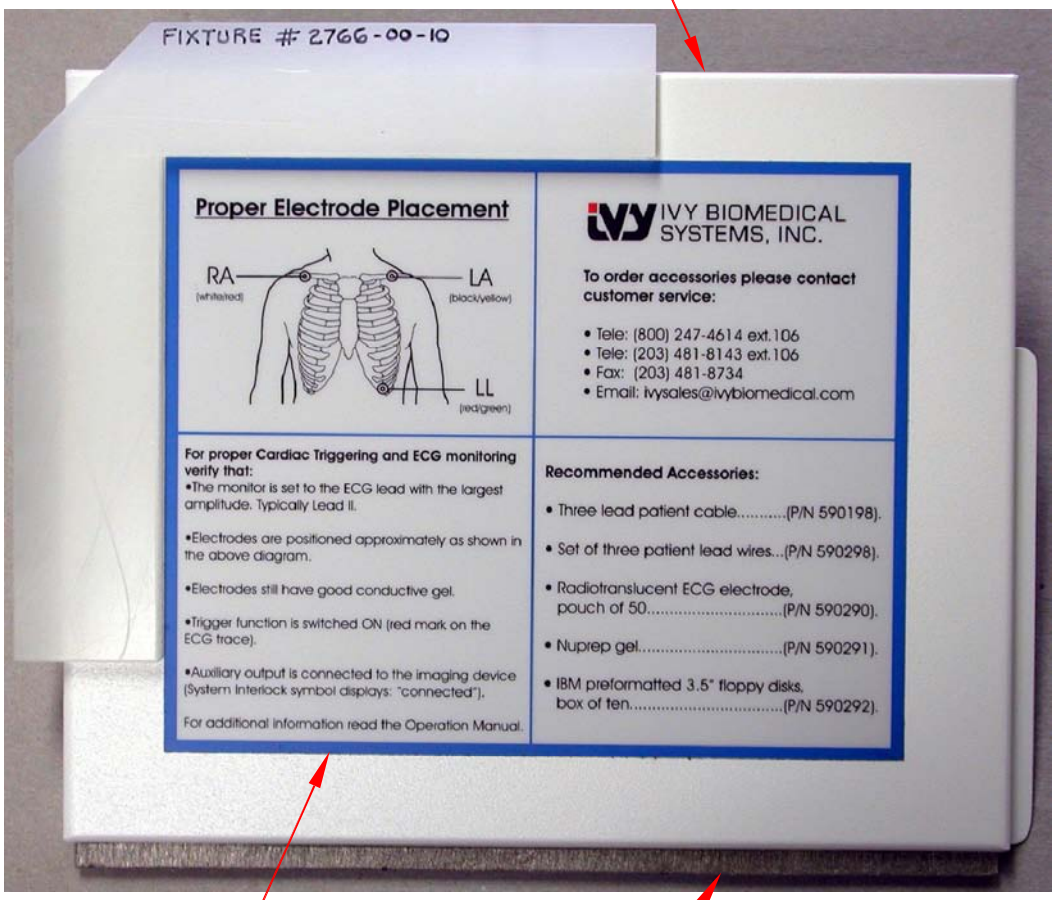
SCALE	SIZE	DRAWING NUMBER		
NONE		BASE	VAR.	OPER.
SHEET 9 OF 10	A	2697	00	01

2701-00-01 FINAL ASSEMBLY, 3000 SERIES

SEQ#	PART#	DESCRIPTION
1	1240-00-01	LABEL, O.E.M. SERIAL NUMBER
2	2319-00-10	GASKET TOP COVER
4	2700-00-01	MAIN ASSEMBLY, 3000 SERIES
5	721007	SCREW, PAN HD, PHIL, STEEL. No. 4-40 x ¼" LONG, NICKEL PL.
6	740003	LOCKWASHER, INT. TOOTH, STEEL. No. 4
7	2759-00-10	CAUTION TAG, LINE VOLTAGE SELECTOR
8	2785-00-10	LABEL, SECURITY SEAL
9	2844-00-10	LABEL, OVERLAY, NON-DISPOSAL

REVISIONS			
REV	DESCRIPTION	BY	DATE
06	FOR REVISION HISTORY SEE 2701-00-01 PARTS LIST.	GP	8-3-05

MODEL 3100 TOP COVER SHOWN


77
FIXTURE # 2766-00-10
Proper Electrode Placement
RA
(white/red)
LA
(black/yellow)
LL
(red/green)
IVY BIOMEDICAL SYSTEMS, INC.
To order accessories please contact customer service:
• Tele: (800) 247-4614 ext.106
• Tele: (203) 481-8143 ext.106
• Fax: (203) 481-8734
• Email: ivysales@ivybiomedical.com
For proper Cardiac Triggering and ECG monitoring verify that:
•The monitor is set to the ECG lead with the largest amplitude. Typically Lead II.
•Electrodes are positioned approximately as shown in the above diagram.
•Electrodes still have good conductive gel.
•Trigger function is switched ON (red mark on the ECG trace).
•Auxiliary output is connected to the imaging device (System Interlock symbol displays: "connected").
For additional information read the Operation Manual.
Recommended Accessories:
• Three lead patient cable.....(P/N 590198).
• Set of three patient lead wires...(P/N 590298).
• Radiotranslucent ECG electrode, pouch of 50.....(P/N 590290).
• Nuprep gel.....(P/N 590291).
• IBM preformatted 3.5" floppy disks, box of ten.....(P/N 590292).
113
2

ADHERE THE LABEL TO THE TOP COVER USING THE FIXTURE No. 2766-00-10 FOR AID IN CENTERING THE LABEL.

ADHERE THE GASKET TO THE UNPAINTED SURFACE OF THE TOP COVER'S LIP. WRAP-AROUND THE EXCESS MATERIAL AND ADHERE TO THE OPPOSITE SIDE.

DRAWN G PEERS	DATE 2-24-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-24-03		
APPROVED DL	DATE 2-24-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE FINAL ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 1 OF 4	DRAWING NUMBER BASE 2701 VAR. 00 OPER. 01

REVISIONS			
REV	DESCRIPTION	BY	DATE
06	FOR REVISION HISTORY SEE 2701-00-01 PARTS LIST.	GP	8-3-05

ADHERE THE SERIAL NUMBER LABEL

142

4

TIE THE RED CAUTION TAG TO THE WIRE FORMED LINE CORD RETAINER

7

9

ADHERE LABEL TO THIS CORNER OF THE REAR PANEL LABEL

DRAWN G PEERS	DATE 2-24-03	IVY BIOMEDICAL SYSTEMS INC. 11 Business Park Drive Branford, Connecticut 06405 (203) 481-4183	
CHECKED RAM	DATE 2-24-03		
APPROVED DL	DATE 2-24-03		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCE: .00X ± .005 .0X ± .015 ANGLES ± 1°		TITLE FINAL ASSEMBLY, 3000 SERIES	
MATERIAL _____		SCALE NONE	SIZE A
FINISH _____		SHEET 3 OF 4	DRAWING NUMBER BASE 2701 VAR. 00 OPER. 01

91	725011	SCREW, PAN HD, PHIL, STEEL, M3 x 6mm LONG
92	740002	FLATWASHER, STEEL, No.4
93	740003	LOCKWASHER, INT. TOOTH, STEEL, No.4
94	740021	LOCKWASHER, SPLIT, STEEL, No.4
95	2783-00-10	FRONT PANEL, GRAPHICS, MODEL 3100
97	2662-00-10	PLATE, ROLL STAND MOUNTING, 3000 SERIES
98	722001	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 5/16" LONG
99	722008	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 3/8" LONG
110	2750-00-10	LABEL, MODEL 3100, CONTACT INFORMATION
111	722017	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 11/16" LONG
112	740007	LOCKWASHER, INT. TOOTH, STEEL, No.6
113	2760-00-10	LABEL, INSTRUCTION, ECG ELECTRODE PLACEMENT
8	2722-00-10	LABEL, REAR PANEL
11	150036	FERRITE, CYLINDERICAL, .562 O.D. x.250 I.D. x 1.125 LONG
27	630014	HEATSHRINK TUBING, CLEAR, 1/8” DIAMETER
29	630023	TY-RAP, 8” LONG
30	641005	WIRE, 18GA, STRANDED GREEN/YELLOW, 300V 80° C
31	641006	WIRE, 18GA, STRANDED BLUE, 300V 105° C
32	641007	WIRE, 18GA, STRANDED BROWN, 300V 105° C
137	740005	FLATWASHER, STEEL, No. 6
142	1240-00-10	LABEL, O.E.M. SERIAL NUMBER

2738-03-15 KIT MODEL 3200

SEQ#	PART#	DESCRIPTION
80	2632-00-10	FRONT PANEL, SUB-ASSEMBLY, MODEL 3000
77	2648-00-11	COVER, TOP, MODEL 3000 PAINTED
86	5151-02-01	POWER SUPPLY BOARD ASSEMBLY, MODEL 3000 WITH ETHERNET
90	722005	SCREW, FLAT HD, PHIL, STEEL, No. 6-32 x 3/8” LONG, 100’
95	2746-03-10	FRONT PANEL, GRAPHICS, MODEL 3200
96	722010	SCREW, PAN HD, PHIL, STEEL, No. 6-32 x 7/16” LONG
120	2650-01-01	HARNES ETHERNET
121	580026	ETHERNET MODULE
122	721004	SCREW, PAN HD, PHIL, NYLON, No. 4-40 x ¼” LONG
123	210046	FEMALE SCREWLOCK KIT
124	750002	STANDOFF, FEMALE, NYLON, ¼” DIA, No. 4-40 x ½” LONG
125	2777-00-11	COVER PALTE, PAINTED

2738-04-15 KIT, MODEL 3150

SEQ#	PART#	DESCRIPTION
77	2648-01-11	COVER, TOP, MODEL 3100, PAINTED
78	2725-00-10	BRACKET, DRIVE CLAMP
79	2726-00-10	BRACKET, RECORDER & 3.50" DRIVE SUPPORT
80	2728-00-10	FRONT PANEL, SUB-ASSEMBLY, MODEL 3100
81	2730-00-10	HARNESS, DRIVE INTERFACE, 5148 TO 5151
82	2731-00-10	HARNESS, DRIVE INTERFACE, 5151 TO CPU MODULE
83	2732-00-10	HARNESS, DRIVE INTERFACE, 5148 TO CPU & 3.50" DRIVE
84	2733-00-10	HARNESS, DRIVE INTERFACE, CPU MODULE TO 3.50" DRIVE
85	2734-00-04	PROGRAM, FOR MODEL 3100 PC/104 MODULE
86	5151-02-01	POWER SUPPLY BOARD ASSEMBLY, MODEL 3100 WITH ETHERNET
87	580030	PC/104 CORE MODULE 3SXI WITH DR DOS CHIP
88	580031	3.50" FLOPPY DISC DRIVE
89	721020	SCREW, PAN HD, PHIL, STEEL, No.4-40 x 5/16" LONG
90	722005	SCREW, FLAT HD, PHIL, STEEL, No.6-32 x 3/8" LONG, 100'

91	725011	SCREW, PAN HD, PHIL, STEEL, M3 x 6mm LONG
92	740002	FLATWASHER, STEEL, No.4
93	740003	LOCKWASHER, INT. TOOTH, STEEL, No.4
94	740021	LOCKWASHER, SPLIT, STEEL, No.4
95	2783-01-00	FRONT PANEL, GRAPHICS, MODEL 3150
97	2662-00-10	PLATE, ROLL STAND MOUNTING, 3000 SERIES
98	722001	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 5/16" LONG
99	722008	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 3/8" LONG
110	2750-01-00	LABEL, MODEL 3100, CONTACT INFORMATION
111	722017	SCREW, PAN HD, PHIL, STEEL, No.6-32 x 11/16" LONG
112	740007	LOCKWASHER, INT. TOOTH, STEEL, No.6
113	2760-02-10	LABEL, INSTRUCTION, ECG ELECTRODE PLACEMENT
126	2650-01-10	HARNESS, ETHERNET, MODEL 3150
127	2784-00-10	LABEL, OVERLAY, ETHERNET
128	580026	ETHERNET MODULE
129	721004	SCREW, PAN HD, SLOTTED, NYLON, No.4-40 x 1/4" LONG
130	730014	NUT, SMALL PATTERN, No.4-40, HEX, 3/16" ACROSS FLATS, 1/16" THK
131	750002	STANDOFF, NYLON, FEMALE, No.4-40 x 1/4" DIA x 1/2" LONG
132	2786-00-10	LABEL, OVERLAY, ETHERNET / DISK STORAGE
133	2787-00-01	HARNESS, ETHERNET / DISK STORAGE SELECTOR
134	5176-00-01	SWITCHER BOARD, ETHERNET / DISK STORAGE
135	721026	SCREW, PAN HD, PHIL, NYLON, No.4-40 x 7/8" LONG
136	630021	TY-RAP, BLACK NYLON, 2.875" LONG
8	2722-01-10	LABEL, REAR PANEL
23	630000	TY-RAP
27	630014	HEATSHRINK TUBING, CLEAR, 1/8” DIAMETER
30	641005	WIRE, 18GA, STRANDED, GREEN/YELLOW, 300V 80° C
31	641006	WIRE, 18GA, STRANDED, BLUE, 300V 105° C
32	641007	WIRE, 18GA, STRANDED, BROWN, 300V 105° C
137	740005	FLATWASHER, STEEL, No. 6
140	150009	FERRITE, CYLINDERICAL
142	1240-00-10	LABEL, O.E.M. SERIAL NUMBER

2738-05-15 KIT, TOSHIBA MODEL 3000

SEQ#	PART#	DESCRIPTION
77	2648-00-11	COVER, TOP, MODEL 3000,
86	5151-00-01	POWER SUPPLY BOARD
90	722005	SCREW, FLAT HD, PHIL, STEEL,
95	2746-02-10	FRONT PANEL, GRAPHICS,
96	722010	SCREW, PAN HD, PHIL, STEEL,
113	2760-03-10	LABEL, INSTRUCTION, ECG
125	2777-00-11	COVER PLATE, PAINTED
8	2722-00-10	LABEL, REAR PANEL
11	150036	FERRITE, CYLINDERICAL, .562 O.D. x .250 I.D. x 1.125 LONG
27	630014	HEATSHRINK TUBING, CLEAR, 1/8” DIAMETER
29	630023	TY-RAP, 8” LONG
30	641005	WIRE, 18GA, STRANDED, GREEN/YELLOW, 300V 80° C
31	641006	WIRE, 18GA, STRANDED, BLUE, 300V 80°C
32	641007	WIRE, 18GA, STRANDED, BROWN, 300V 80° C
80	2632-00-10	FRONT PANEL SUB-ASSEMBLY, MODEL 3000
81	2730-00-10	HARNESS, DRIVE INTERFACE, 5148 TO 5151
129	721004	SCREW, PAN HD, SLOTTED, NYLON, No. 4-40 x 1/4" LONG
131	2839-00-10	ECG FILTER BOARD HARNESS
141	5190-00-01	ECG FILTER BOARD ASSEMBLY
142	1240-01-10	LABEL, SERIAL NUMBER, MODEL 3000T

2739-00-15 KIT, RECORDER, MODEL 3000

SEQ#	PART#	DESCRIPTION
100	2538-00-10	RECORDER MOUNT (MOLDED)
101	2593-00-10	GASKET, RECORDER, XE-50
102	2608-01-10	HARNESS, RECORDER INTERFACE
103	2645-02-10	BRACKET, RECORDER SUPPORT
104	380004	RECORDER, XE-50, THERMAL, 50mm
105	730010	NUT, ACORN, STEEL, No.4-40
106	740002	FLATWASHER, STEEL, No.4
107	740003	LOCKWASHER, INTERNAL TOOTH, No.4
143	590035	RECORDER PAPER, 50mm x 80', NO GRID

2739-01-15 KIT, RECORDER, MODEL 3100

SEQ#	PART#	DESCRIPTION
100	2538-00-10	RECORDER MOUNT (MOLDED)
101	2593-00-10	GASKET, RECORDER, XE-50
102	2608-01-10	HARNESS, RECORDER INTERFACE
104	380004	RECORDER, XE-50, THERMAL, 50mm
105	730010	NUT, ACORN, STEEL, No.4-40
106	740002	FLATWASHER, STEEL, No.4
107	740003	LOCKWASHER, INTERNAL TOOTH, No.4
143	590035	RECORDER PAPER, 50mm x 80', NO GRID

OPTION KITS

2752-00-15 KIT, WITHOUT RECORDER

SEQ#	PART #	DESCRIPTION
108	2567-00-10	RECORDER CUTOUT COVER PLATE (MOLDED) 1
109	750007	STANDOFF, FEMALE, NYLON, No.4-40 x 1/4" HEX x 7/16" LG 2

2772-00-15 KIT, ECG SIMULATOR

SEQ#	PART #	DESCRIPTION
114	2731-01-10	ECG SIMULATOR INTERFACE HARNESS ASSEMBLY
115	2755-00-10	LABEL, ECG SIMULATOR
116	5160-00-01	ECG SIMULATOR BOARD ASSEMBLY
117	210068	BANANA PLUG WITH ECG SNAP STUD
118	750054	STANDOFF, FEMALE, ALUMINUM, NO 4-40, ¼” HEX, 1.187” LONG

2772-01-15 KIT, ECG SIMULATOR

SEQ#	PART #	DESCRIPTION
119	680040	HOLE PLUG, 17/32” (.531) DIAMETER, WHITE